The Aṣṭādhyāyī of Pāṇini

Volume I

Introduction to the Aṣṭādhyāyī as a Grammatical Device

Rama Nath Sharma

This volume examines the notions of grammar, rule, and derivation with reference to the *Aṣṭādhyāyī* as a grammatical device. An attempt has been made to clearly outline and illustrate the basic constructs of the Pāṇinian linguistic theory especially as they relate to the traditional views on the one hand and modern linguistic orientations on the other. A developmental history of the Pāṇinian school focusing on major texts and trend along with a detailed treatment of rule-types, *paribhāṣās,* and *samāsas,* complement the discussion of derivational mechanism and related conventions.

This book is a reprint of the earlier edition, to which has been added a translation of rules in the index and an updated bibliography.

Rama Nath Sharma is Professor of Sanskrit at the University of Hawaii at Manoa, Honolulu, Hawaii, USA. He received his Ph.D. (1971) in General Linguistics from the University of Rochester where he also taught Linguistics for five years. His research interest includes grammatical theory in general, and Pāṇini and the Indian grammatical tradition, in particular.

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VOL. I

INTRODUCTION TO THE *AṢṬĀDHYĀYĪ*
AS A GRAMMATICAL DEVICE

RAMA NATH SHARMA
University of Hawaii

Second revised and enlarged edition
with Index of Sūtras (translated and explained)

Munshiram Manoharlal
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In memory
of my mother

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Preface to the Second Edition

I am happy to see this reprint edition of volume one, *The Aṣṭādhyāyī of Pāṇini*, Introduction to the *Aṣṭādhyāyī* as a Grammatical Device. I had promised to prepare an enlarged edition of this study with additional details on scanning conventions and traffic rules but, mostly due to preparation of other volumes, I could not keep this promise. I do not think it will be possible for me to go back to it in the near future. There are still many other projects which I must complete. But since my presentation of derivational system still makes sense, and also since it could still be used to the benefit of understanding of Pāṇinian system of derivation, I am in favor of bringing this reprint edition. Pāṇini has become very popular in contemporary linguistics, computation and artificial intelligence. The Director of a German institute where they are working on computer application of Pāṇini, considers this volume the best available in the market. I have updated the bibliography and have added translations of rules in the index. I hope my readers will find this addition useful.

I would like to thank Christopher Bopp for preparing the index. Mr. Devendra Jain, Director of Munshiram Manoharlal Publishers, gets most credit for bringing out this reprint edition at such a short notice. I shall appreciate it very much if my readers write to me about the contents of this volume.

RAMA NATH SHARMA

1 December 2001
University of Hawaii at Manoa
Honolulu, Hawaii 96822, USA

Preface to the First Edition

This book is a development of one basic assumption: that the *Aṣṭādhyāyī* of Pāṇini is a grammatical device which consists of a limited number of ordered rules capable of deriving an infinite number of correct Sanskrit sentences. This, essentially, is the assumption that modern linguists make about grammatical devices. However, the Pāṇinian device is in many ways unique. I have tried to present the basic mechanisms of this device by focusing upon how they actually operate in the derivation process.

Since there is considerable literature dealing with the nature, language and principles of the *Aṣṭādhyāyī*, and also since a comprehensive treatment of them is soon to be completed by George Cardona, I have strived to refrain from duplication. As already stated, my approach is different. However, certain topics had to be included, the discussion about *kārakas* in chapter 9, for example. Chapters 1 and 2 are provided by way of background. The remaining chapters, in one way or another, complement or illustrate my basic hypothesis. Chapter 7 presents a listing of the Pāṇinian definitions and interpretations. Such a listing is provided for quick reference. Chapter 8 presents some additional interpretive rules, which, although not explicitly stated in the *Aṣṭādhyāyī* are essential for properly comprehending its derivational mechanism. These interpretive rules have been selected from the *Paribhāṣenduśekhara* of Nāgeśa based upon their importance for my study. This chapter is also essentially a reference chapter. Chapter 11 presents a detailed description of Sanskrit compounds which is designed to show how my proposals are fully applicable to an important derivational type.

My orientation towards Pāṇini is basically linguistic, in the sense that I try to look at the *Aṣṭādhyāyī* in view of questions which are often asked in modern linguistics, especially in the area of formulation, interpretation, order and application of rules. However, since I have relied heavily upon the traditional interpretations, instances accepting the traditional rather than the contemporary view are numerous. My rather critical attitude towards certain recent writings should not be looked upon as an effort on my part to diminish their importance; my motive in all cases has been to put them in proper perspective. There are features in Pāṇini which one may be tempted to identify with features outside Pāṇini. My position on such identification is that Pāṇini is what Pāṇini is. Any attempt to interpret the *Aṣṭādhyāyī* in the light of some particular contemporary linguistic theory risks compromising Pāṇini. Finally, it should be understood that my ideas, though I have tried to present them clearly, are not the final word. There is still a great deal of work to be done. For example, the derivational conventions which I propose, need further refinement.

I am honoured to have had the opportunity of studying extensive passages from the traditional texts with my father, Pandit Raghunath Sharma. Pandit Ramaprasad Tripathi, and my younger brother Narendra — both of the Sanskrit University, Varanasi — were most helpful in bringing certain of my ideas into better focus. I am indebted to Professor O.L. Chavarria-Aguilar for leading me into Pāṇinian studies. I will be failing in my duties if I did not mention that I have benefited, above all, from the writings, which include unpublished manuscripts and personal communications, of Professor George Cardona of the University of Pennsylvania. Cardona has constantly served as an important source of reference and insight. Of course, I take full responsibility for any errors I may have made in this book.

Thanks are also due to the University of Hawaii, its Research Council and the Department of Indo-Pacific Languages, especially to its chairman, D. Haigh Roop, for facilitating my research through grants and sabbatical leave. The American Institute of Indian Studies has been very supportive of my research endeavours on Pāṇini. I am grateful for their grant under which I finished the writing of this volume.

This book is being published as volume one of a projected five-volume study. Subsequent volumes will include the text of the *Aṣṭādhyāyī* with English translation, explanatory notes and complete derivational history of all forms cited as examples by the *Kāśikāvṛtti*. Finally, I must thank Stanley Schab, my research assistant, for not only editing and typing the manuscript but also for making some very valuable comments.

gahanataragranthārthān ativitatān vīkṣya maṅkṣu saṃkṣipatām /
skhalitam api sambhaven nas tatra vibudhā vimatsarāḥ śaraṇam //

Prakriyāsarvasva (I:79) of Nārāyaṇabhaṭṭa

RAMA NATH SHARMA

University of Hawaii
Honolulu, U.S.A.

Abbreviations

AD	*aṅga* domain
CD	controlling domain
CS	conceptual structure
D	*dhātu*
DP	*dhātupāṭha*
Ed.	editor
FC	functional context
FSG	finite state grammar
GP	*gaṇapāṭha*
Kāś	*Kāśikā*, *Kāśikāvṛtti* of Vāmana-Jayāditya
Lā	*liṅgānuśāsana*
Mbh	*Mahābhāṣya*, *Vyākaraṇa-mahābhāṣya* of Patañjali
OD	obligatory domain
P	*prātipadika*
PD	*pada* domain
Phs	*Phiṭ-sūtra*
PK	*Prakriyā-kaumudī* of Rāmacandra
PM	*Padamañjarī* of Haradatta
PLM	*Paramalaghumañjūṣā* of Nāgeśa
PŚ	*Paribhāṣenduśekhara* of Nāgeśa
RI	referential index
RV	*Ṛgveda*
SK	*Siddhānta-kaumudī* of Bhaṭṭoji Dīkṣita
SP	*sūtrapāṭha*
Śs	*Śiva-sūtra*
TG	transformational grammar
tr.	translator
Us	*Uṇādi-sūtra*
vol	volume
VP	*Vākyapadīya* of Bhartṛhari

1

Pāṇini and the Pāṇinīyas

A great deal of literature already exists on the developmental history of the Pāṇinian school of grammar. Recently, George Cardona (1976) presented an excellent study surveying this literature. Cardona not only provides the most comprehensive bibliography to date, but also judiciously examines major issues with reference to varying views and offers his own conclusions. My aim here is to present a general developmental history focusing on the major texts, their relationships, characteristics and style. While relative chronology will still be maintained, the focus will shift from chronology and relevant evidence to texts and trends. The date and time of various grammarians will not be discussed.[1]

The grammatical literature consists of *sūtra* 'rule', *vṛtti* 'gloss', *vārttika* 'note', *bhāṣya* 'exposition', *prakriyā* 'derivation' and *siddhānta* 'theory'. A *sūtra,* literally a thread, is a formulaic statement which presents a rule of grammar in a laconic style which emphasizes brevity, although certainly not at the expense of clarity. A *vṛtti,* technically, dwells upon a *sūtra* and is rendered in the form of a statement paraphrasing a rule by supplying understood or missing elements. A *vārttika* is a statement of an intermediate level between a *sūtra* and a *vṛtti* rendered with the express purpose of examining what has or has not been stated, or has been poorly stated, by a *sūtra.*[2] A *bhāṣya* can be characterized as a detailed exposition (*vyākhyāna*) of a *sūtra*, along with corresponding *vārttikas*, structured in the style of illustration using examples (*udāharaṇa*) and counter-examples (*pratyudāharaṇa*). It seeks to supply any missing links (*vākyādhyāhāra*).[3] *Prakriyā* normally represents the applied aspect of a *sūtra* in the sense that it focuses on the derivation of forms. It should be noted that though *prakriyā* focuses on examples and operations, it may also offer *vṛtti* and exposition, though these latter only complement the rule application. The *siddhānta* literature focuses on the formulation and exposition of basic theoretical issues. Thus, these treatises will assume *vṛtti, vārttika* and *prakriyā* unless these latter become crucial to the issues on hand. Except for the *sūtras*, all the other categories jointly constitute what is generally referred to as the commentarial literature.

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[1] The dates cited here are approximations generally accepted by scholars.

[2] *uktānuktaduruktānāṃ cintā yatra pravarttate /*
taṃ granthaṃ vārttikaṃ prāhur varttikajñā maniṣiṇaḥ //

[3] *Mbh.* I:43.

As is the standard practice, a commentary must have its *pratīka* 'symbol, unit of focus'. Thus, a *vṛtti* accepts a *sūtra* as its unit of focus. A *bhāṣya* treats a *vārttika* as its unit of focus. When it comes to *prakriyā*, operational topics and examples serve as *pratīka*. For a treatise on *siddhānta*, it is a theoretical issue which constitutes the unit of focus. A commentary on *vṛtti* will similarly treat a particular element of the *vṛtti* as its *pratīka*. The *pratīkas* are often helpful in identifying specific issues. They also ensure that commentaries remain to the point. Given the idea of *pratīka*, one can easily discern the interrelationship among these forms of literature. The relationship between a *sūtra* and *vṛtti*, a *vārttika* and *bhāṣya*, a *bhāṣya* and *siddhānta* and a *vṛtti* and *prakriyā* thus becomes closely established. I shall illustrate this further when I discuss each individual type. Suffice it to say here that a commentary needs a focus.

Pāṇinians accept the *Aṣṭādhyāyī* as the most important text representing the *sūtra* form of literature. It is commonly referred to as the *Aṣṭaka* 'collection of eight', or the *Sūtrapāṭha* (*SP*) 'recitation of *sūtras*'. It consists of nearly four thousand *sūtras* presented in eight chapters (*adhyāya*) of four quarters (*pāda*) each. Reference to a *sūtra* is made by following the convention *b.q.n.* where *b.q.n.* represent the book, quarter and *sūtra* number respectively. The first *sūtra* of the first quarter of the first book, then, will be 1.1.1.

The only extant full-length *vṛtti* on the *SP* is the *Kāśikāvṛtti* (*Kāśikā*) of Jayāditya and Vāmana (AD 7). The *vārttikas* of Kātyāyana (3 BC) generally constitute the *vārttika* literature. They are available as part of the *Vyākaraṇa-Mahābhāṣya* (*Mahābhāṣya; Mbh.*) of Patañjali (2 BC) which, on its own merit, is accepted as the single most important commentary in the tradition. The *prakriyā* tradition begins with the *Rūpāvatāra* of Dharmakīrti (AD 11) and, through the *Prakriyākaumudī* (*PK*) of Rāmacandra (AD 14), reaches its peak in the *Siddhāntakaumudī* (*SK*) of Bhaṭṭoji Dīkṣita (AD 16). In addition to the *Mahābhāṣya*, which is indispensable for the understanding of any aspect of the Pāṇinian *sūtras*, the *siddhānta* treatises basically are constituted by the *Vākyapadīya* (*VP*) of Bhartṛhari (AD 5), *Vaiyākaraṇasiddhāntakārikā* of Bhaṭṭoji Dīkṣita, *Vaiyākaraṇabhūṣaṇa* of Kauṇḍabhaṭṭa[4] (AD 17) and *Vaiyākaraṇasiddhāntamañjūṣā* of Nāgeśabhaṭṭa (Nāgeśa; AD 17-18) which has both a short and very short (*laghu; paramalaghu*) version. Pāṇini, Kātyāyana and Patañjali are called the three sages (*trimuni*) of grammar. According to the dictum of *yathottaraṃ munīnāṃ prāmāṇyam*, each subsequent sage enjoys relatively greater authority (*pramāṇa*), making Patañjali supreme authority in matters pertaining to Pāṇini.

I shall now present a general description of each type of literature mentioned above. Before we proceed, however, I must state my intention of not discussing the *siddhānta* literature. I so limit my discussion since (*i*) many aspects of the *siddhānta* literature already will be covered by my discussion of other forms; (*ii*) even a general discussion on *siddhānta* treatises would require much space and (*iii*) their content, especially that of the *VP* of Bhartṛhari, would take us far afield as they discuss aspects of grammatical theory by bringing ideas from metaphysics, philosophy, epistemology, logic and ritual.

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[4] Note that Kauṇḍabhaṭṭa also wrote a commentary, the *Vaiyākaraṇabhūṣaṇa*, on the *Vaiyākaraṇasiddhāntakārikā* of Bhaṭṭoji Dīkṣita.

The *SP* of the *Aṣṭādhyāyī* essentially was handed down to us through oral tradition. It is remarkable that the text, except for a few variant readings and interpolations, has remained intact, at least regarding its function. Variations in the *SP* are caused primarily by

(1) their transmittal through oral tradition;
(2) their acceptance by the authors of *vṛtti* (*vṛttikāras*) in one form or another;
(3) recitation of certain *sūtras* by Pāṇini in different forms;
(4) treatment of *vārttikas*, or parts therefrom, as a *sūtra* or its part;
(5) inclusion of a *sūtra* as part of a *gaṇa* 'list of nominals in a group'; and
(6) acceptance of interpretation or listing of *sūtras* found outside the Pāṇinian school.

It is claimed by Śrīśacandra Cakravartī (1919),[5] based on a verse cited in the preface of his edition of the *Nyāsa*, commentary by Jinendrabuddhi on *Kāśikā*, that the total number of *sūtras* which none other than Pāṇini himself composed comes to 3,996. The total number of rules in the *Kāśikā* comes to 3,981. The additional fifteen rules are accounted for by accepting as rules *atha śabdānuśāsanam*, the first aphorism of the *Mahābhāṣya*, and the fourteen *Śivasūtras* (*Śs*), rules which present the inventory of sounds in the order most conducive to forming and manipulating abbreviatory terms (*pratyāhāra*; see chapter 2 for details).

There are compelling reasons to believe in the Pāṇinian authorship of the *Ss.* Yudhiṣṭhira Mīmāṃsaka (1973:209-11) effectively demonstrates that *atha śabdānuśāsanam* is the opening aphorism of the *Aṣṭādhyāyī*. The total number of *sūtras* according to the *SK* of Bhaṭṭoji Dīkṣita is 3,976. The five-rule difference from *Kāśikā* is due to the omission in the *SK* of four rules from the fourth quarter of the fourth book and one rule from the fourth quarter of sixth book. The exact number of *sūtras* of the *Aṣṭādhyāyī* thus varies. Śrīnārāyaṇa Miśra (1969:49-54) discusses fifty-three rules with corresponding variations in the *Kāśikā, Mahābhāṣya* and *SK*. Yudhiṣṭhira Mīmāṃsaka (1973,II), and subsequently Bhattacharya (1966), have presented a list of variants. Bhattacharya also discusses why some of the variant readings are unacceptable as well as what may constitute a clue in figuring out which rules may be pre-Pāṇinian.

I shall now present some basic features of the *SP* which have been discussed in detail elsewhere in this volume. The *Aṣṭādhyāyī* is a grammar

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[5] *trīṇi sūtrasahasrāṇi tathā navaśatāni ca ṣaṇṇavatiṃ ca sūtrāṇāṃ pāṇiniḥ kṛtavān svayam.*

(*vyākaraṇa*), and like all grammars, it too has a goal (*lakṣya*): to systematically analyse the correct sentences (*vākya*) of the Sanskrit language, both the classical as well as Vedic, by means of its *sūtras* (*lakṣaṇa*). This analysis is presented by first identifying the constituent words (*pada*) of a sentence and then subjecting them to an analysis in terms of bases (*prakṛti*), affixes (*pratyaya*) and operations (*kārya*) relative to emergent structures. This conceptual division of a sentence into *padas* underlying bases and affixes as well as operations applicable to emergent structures does not have any existence outside the world of grammar. It is strictly a product of the grammarian's own imagination (*kalpanā;* see chapter 3 for details). The object of this analysis, however, must be real. A grammarian presents the description of sentences existing in usage in the outside world. His *lakṣaṇa*, as a consequence, becomes subservient to *lakṣya*. Pāṇini is no exception to this. It is because of this that the tradition recognizes him not as *karttā* 'creator' but as *smarttā* 'one who recalls'.[6] That is, he does not create sentences but recalls them from usage. The relationship between grammar and usage is discussed in chapter 3.

A grammarian may have control over *lakṣaṇa* but certainly not over *lakṣya*. Since the means (*upāya*) of analysis is strictly the grammarian's own imagination (*kalpanā*), a possibility of varying sets of grammar cannot be ruled out. The quality of such grammars, however, has to be judged on the basis of how well they perform their function. The *Aṣṭādhyāyī* has been adjudged the best grammar ever written for any language. Leonard Bloomfield calls it "one of the greatest monuments of human intelligence."[7] It should be remembered, however, that the excellence it achieved must be interpreted as the culmination of a very rich grammatical tradition.

In order to analyse Sanskrit sentences, Pāṇini presents the conceptual structure (*CS*) of sentences in which abstract syntactic categories and grammatico-semantic relations are identified. The process of lexicalisation, and operations on emergent structures, then follows. What is derived as a result is a correct sentence of the Sanskrit language. Mention must also be made here that Pāṇini manipulates the derivation of words as a tool for deriving sentences (see chapter 3 for details). He also restricts his analysis to form only; meaning has been treated by grammarians as falling outside the derivational competence of grammar.[8] Whatever description of meaning is available in the *Aṣṭādhyāyī* is complementary to its goal and is provided largely in order to distinguish derivates. Again, such meanings are attested by usage, which is only logical since the grammar believes in the authority (*prāmāṇya*) of usage (*loka*).

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[6] Bhattacharya (1966:217).

[7] *Language* (1933:11).

[8] Bhattacharya (1966:214).

Now a few observations about rules. A *sūtra* is brief in form and precise in function. Proper understanding of both form and function is determined by context (*prakaraṇa*). Context can be viewed as twofold: physical and functional though the overriding issue in both is function. Physical context refers to placement of rules in particular places. Rules sharing a physical or functional context are said to be related. Since a *sūtra* is a formulaic statement, physical context helps its interpretation via *anuvṛtti* 'recurrence' and relative order, etc. It is well known that Pāṇini puts his *sūtras* in sets or blocks. The relative order of a *sūtra* in a set, or the order of sets within the grammar, underlies a relationship among *sūtras* which is crucial to the Pāṇinian derivational mechanism. For example, Pāṇini formulates his rules in view of general (*sāmānya*), particular (*viśeṣa*) and residual (*śeṣa*) relationships. A particular rule is said to carve out its domain of application from within the domain of its corresponding general rule. In this sense, a particular rule is treated as an exception (*apavāda*) to its related general rule and consequently blocks its application. A residual rule covers whatever has not been covered by the general or related exceptions. The process of reference and *anuvṛtti* is discussed in chapter 4; the types of rules and their hierarchical arrangement in chapters 5 and 6.

A rule is formulated to apply. That is, no rule is regarded as being completely without scope of application. A rule which is in danger of becoming vacuous (*vyartha*), blocks the application of the rule with valid scope of application elsewhere (see chapter 3 for details). This is the general position. However, in view of the complexity of the language as well as the derivational mechanism, more formulations are required to outline the relative strength of *sūtras*. Thus, if two rules become simultaneously (*yugapad*) applicable to a single context and both rules have valid scope of application elsewhere, the rule which is subsequent (*para*) in order of enumeration blocks the application of a prior (*pūrva*) rule (1.4.2 *vipratiṣedhe* . . .). Exceptions have also been made in cases where a particular rule does not block its general counterpart obligatorily (3.1.94 *vā' sarūpo' striyām*) or where application in turn (*paryāya*) is permitted (3.1.96 *tavyat-tavyānīyaraḥ*). Similarly, blocking of an externally conditioned (*bahiraṅga*) rule or operation by an internally conditioned (*antaraṅga*) one is also permitted. Furthermore, since an entity *x* can be treated as *y*, the application of a rule or set of rules can be treated as suspended (*asiddha*) with reference to another rule or set (see chapter 5 for details). This principle of *asiddhatva* is responsible for dividing the *Aṣṭādhyāyī* into two major sections (8.2.1 *pūrvatrāsiddham*), the first consisting of the first seven books and the first quarter of book eight, and the second consisting of the last three quarters of book eight. Placement of rules in ordered sets also marks functional divisions within these major divisions. Of course, all functional divisions are made in light of internal relations among rules and the contexts they share. To sum up, the rules of the *Aṣṭādhyāyī* are formulated and arranged on the basis of context, function, relative strength and internal relationship.

Pāṇini's grammar serves as a means towards understanding sentences. This goal is accomplished by abstracting generalizations from usage and formulating rules which best capture that usage. In order to facilitate proper formulation, interpretation and application of rules, however, a grammar also requires a metatheory. This Pāṇini brilliantly supplies. In so doing, he carefully defines terms (*saṃjñā*), sets forth rules of interpretation (*paribhāṣā*) and outlines the conventions he follows. However, given the *sūtra* style of rules, one must make inferences, and test and reject or accept them depending on whether or not they are in consonance with Pāṇinian practice. Such procedure is the primary task of *vyākhyāna* which, in addition to being instrumental to the proper understanding of *sūtras*, has also contributed many proposals which are incorporated in the grammar. The *paribhāṣās* of the *Paribhāṣenduśekhara* (*PŚ*) of Nāgeśa (many of which may be found here in chapter 8) are one example. Another example is constituted by the *vārttikas* of Kātyāyana to which I shall now turn.

It has been stated that *vārttikas* are statements found in the *bhāṣya* where they serve as *pratīka* 'focus'. They focus on things which have not been or have been but poorly stated (*durukta*) in the *sūtras* (see above fn. 2). The existence[9] of *vārttikas* prior to Kātyāyana is well established. However, the pre-Kātyāyana *vārttikas* are lost and *vārttika* has become synonymous with Kātyāyana's *vārttika* just as *bhāṣya* has become synonymous with the *Mahābhāṣya* of Patañjali. The total number of *sūtras* on which Kātyāyana offers his *vārttikas* is 1,245.[10] Kielhorn gives the total number of *vārttikas* as 4,293. Is this a correct number? Why did Kātyāyana not offer *vārttikas* on other *sūtras*? These are not easy questions to answer. First of all, *vārttikas* are available as part of the *Mahābhāṣya*. Kielhorn effectively shows how they can be recognised by treating an immediately following paraphrase of Patañjali as a clue. However, not all *vārttikas* recognized by this method are accepted by commentators. Answering the second question is more difficult. Perhaps Kātyāyana did not find it necessary to add *vārttikas* to other rules or perhaps *vārttikas* on rules not treated by Patañjali have been lost as the *Mahābhāṣya* is their only extant source. That Kātyāyana wrote *vārttikas* for only one-third of the *sūtras* of Pāṇini is difficult to believe. It is my thinking that Kātyāyana also formulated *vārttikas* on other rules but Patañjali did not make use of them. The reason for this thinking is the fact that a *bhāṣya* treats *vārttika* as a *pratīka* in a well structured argument known as *vyākhyāna*. The selection and treatment of a *vārttika* depends entirely on how it fits in the structure of *vyākhyāna*. The very fact that Patañjali paraphrases a *vārttika* in the same way that a *vṛtti* paraphrases a *sūtra* is thus not a chance.

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[9] Mīmāṃsaka (1973:292ff).

[10] Sarma (1968:54).

The purpose of a *vārttika* can only be established with reference to the structure of the *Mahābhāṣya* and corresponding discussion. Joshi (1969 : iii-iv) characterizes the discussion of the *Mahābhāṣya* as a 'sustained argument and identifies its pattern as consisting of 'question (objection)-answer'. Since an objection has to be refuted or affirmed based on its examination in light of examples and counter-examples, an objection may have counter-objections which again may be refuted or reaffirmed. A *vārttika* forms part of this complex argument structure by serving as a *pratīka*. A *vārttika* can also ask questions, raise objections, refute or reaffirm them, though only as a player in the game plan totally at the mercy of the planner of the game. The purpose of a *bhāṣya* is to make a *sūtra* fully understood and the purpose of a *vārttika* is to complement a *sūtra*.

People still have the impression that Kātyāyana formulated his *vārttikas* to find fault with the *sūtras* of Pāṇini. However, since this is not true of all the *vārttikas*, and especially not of those which were rejected by Patañjali, this view should be abandoned. By focusing more on the *vārttikas* which Patañjali accepted and which seek certain modification in a *sūtra* or its scope, people consider Kātyāyana an antagonist of Pāṇini. They also think that Patañjali was the champion defender of Pāṇini against Kātyāyana. Kielhorn (1963:52) is correct in observing that "Pāṇini has suffered more at his [Patañjali's] hands than at those of the *vārttikakāras*". Patañjali (*Mbh.* I:128) claims that not even a single letter of a rule is meaningless. Yet we see many of the *sūtras* of Pāṇini declared meaningless by Patañjali.[11] Can we say that Patañjali is trying to find fault with the *sūtras* of Pāṇini? The answer has to be no. I think that it was a common practice to explain *sūtras* by raising doubts about aspects of their formulation and application. One can even call it putting a *sūtra* to test. This testing is indeed thorough and the *Mahābhāṣya*, aided by *vārttikas*, does it commendably, though its ultimate goal is exposition. It has also been suggested that the Sanskrit language had changed by the time of Kātyāyana. To account for this change, Kātyāyana formulated *vārttikas*.[12] While linguistic changes from Pāṇini's time to Kātyāyana's may not be totally ruled out, understanding the primary purpose of the *vārttikas* as an attempt to accommodate them is unreasonable. I am not denying, however, that there are some *vārttikas* which can be viewed as proposing accommodation for usage subsequent to, or even contemporaneous with Pāṇini's Sanskrit.

I shall now try to explain the operation of *vārttikas* by using some specific examples. Given the string *sudhī + bhis upāsya + sU* (*SK.* I:55) where *bhis* and *sU* are instrumental plural and nominative singular endings respectively, 2.1.32 *kartṛkaraṇe kṛtā bahulam* can allow the formation of the compound *sudhyupāsyaḥ* 'to be revered by the wise'. The endings will be deleted by 2.4.71 *supo dhātu prātipadikayoḥ*. However, Pāṇini, by rule 1.1.62 *pratyayalope pratyayalakṣaṇam*, states that operations conditioned by an affix obtain even when the affix has been deleted. Given this, *sudhī*, whose affix *bhis* has been deleted, can still be treated as a *pada* (1.4.14 *suptiṅantaṃ padam*). After 6.1.77 *iko yaṇ aci* applies to yield *sudh*(*ī* → *y*) + *upāsya*, rule 8.2.23 *saṃyogāntasya lopaḥ* becomes applicable. This rule requires the deletion of the last consonant of a conjunct occurring at the end of a *pada*. Thus, it would yield: *sudh* (*y* → ∅) + *upāsya* = **sudhupāsya*, a wrong form. It is true that after a replacement in *yṆ* by 6.1.77, the deletion of a final consonant of a conjunct at the end of a *pada* is not carried out. Pāṇini does not do this in his own *sūtras* either (cf. 5.2.94 *tad asyāsty asminn iti matup;* 2.4.44 *ātmanepadeṣv anyatarasyām*). Obviously, the scope of 8.2.23 is much too wide. Kātyāyana (*Mbh.* V:387) suggests by his *vārttika, saṃyogāntasya lope yaṇaḥ pratiṣedhaḥ*, that deletion of an *yṆ* replacement at the end of a *pada* should be prohibited. As a result, wrong forms such as **sudhupāsya* cannot result. Pāṇini's failure to include this prohibition has been treated by many as his carelessness.[13] Kātyāyana's formulation of this *vārttika* then, can be treated as discussing something which has not been said, or has been stated but poorly; the *vārttika* thus complements the *sūtra*.

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[11] See, for example the *Mbh.* discussion of *sūtras* 1.4.25-31 (II:392-99).

[12] Sarma (1968:55-75).

Now consider the order of constituents in a *dvandva* (2.2.29 *cārthe dvandvaḥ*) compound. Pāṇini states that a constituent having fewer vowels should be placed first (2.2.34 *alpāc taram*). However, some usages do not conform to this general ruling. Kātyāyana issues a series of clarifying *vārttikas* (*Mbh*. II:747-8). For example, he states that names of seasons and constellations which contain equal number of vowels should follow the order in which they occur (*ṛtunakṣatrāṇāṃ ānupūrvyeṇa samānākṣarāṇāṃ pūrvanipātaḥ*). Thus we get examples *citrāsvātī* 'the constellations *Citrā* and *Svāti*' and *śiśiravasantau* 'winter and spring', etc. Similarly, other usages are explained by additional *vārttikas* . Kātyāyana states that constituents with short (*laghu;* 1.4.10 *hrasvaṃ laghu*) vowels or those denoting an elder brother or lower number should also be preplaced. This accounts for examples such as *śaraśādam* 'reed and weed', *yudhiṣṭhirārjunau* 'Yudhiṣṭhira and Arjuna' and *dvitrā* 'two or three'. Obviously these *vārttikas* account for forms which could not be accounted for by rule 2.2.34.

The assignment of *ātmanepada* 'middle' and *parasmaipada* 'active' endings is very tricky. Kātyāyana has offered many *vārttikas* which further sharpen the focus of the Pāṇinian rules. Consider 1.3.25 *upān mantrakaraṇe* which states that *sthā* used with the preverb *upa* takes *ātmanepada* when *mantra* is the *karaṇa* 'means *par excellence*' of the action. The word *mantra* refers to a hymn or chant. This could cover examples such as *aindryā gārhyapatyam upatiṣṭhate* 'he is worshipping the *gārhyapatya* fire by means of chanting the hymn to Indra.' Kātyāyana introduces the *vārttika*: *upād devapūjā-saṅgatikaraṇa-mitrakaraṇa-pathiṣv-iti*. This extends the coverage of the rules to include examples where praising gods, making friends and road-destination are being expressed. Thus, we get the following examples:

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[13] Iyengar (1983:55).

(*a*) *ādityam upatiṣṭhate*
'he is praising the Sun'
(*b*) *devadatto yajñadattam upatiṣṭhate*
'Devadatta is making friends with Yajñadatta'
(*c*) *ayaṃ panthā pāṭaliputram upatiṣṭhate*
'this road leads to Pāṭaliputra'.

Besides such numerous examples where Kātyāyana complements, commendably, the Pāṇinian rules, there are occasions when he offers *vārttikas* which are overruled by Patañjali. This suggests the following inference: the rejected as well as accepted *vārttikas* were offered not as independent statements questioning the formulation of the *sūtras* in question, but as statements serving as cues or symbols (*pratīka*) in light of which a *sūtra* may be examined. This makes a *vārttika* one unit of thought in the complex structure of a *bhāṣya* discussion. It is for this reason that a *vārttika* is also referred to as *bhāṣyasūtra*.

The *Mahābhāṣya* of Patañjali is regarded as the second most important grammatical text after the *Aṣṭādhyāyī*. As has been stated, its aim is the presentation of *vyākhyāna* 'exposition' of the *sūtras* of Pāṇini. It is claimed (Sarma 1968:53) that Patañjali commented upon 1,701 *sūtras* in addition to *atha śabdānuśāsanam* and eight *Śivasūtras*. He classified the *Mahābhāṣya* into 85 *āhnikas* 'day-sessions' with the first being generally known as *Paspaśāhnika* (*Paspaśā*) 'introductory day-session'. The order of selected *sūtras* follows the Pāṇinian order. A *bhāṣya* discussion is rendered as a dialogue or structured argument where a *vārttika* or a statement from Patañjali serves as *pratīka*. After a paraphrase of a *vārttika* is presented, the discussion illustrates and evaluates it by means of arguments supported by examples and counter-examples. The tradition recognizes three participants in the discussion: the student (*śiṣya*), teacher's aide (*ācāryadeśīya*) and teacher (*ācārya*). The tradition also makes references to a participant who knows only part of the truth (*ekadeśin*) and another who offers the final view (*siddhāntin*). It is to be remembered here that identifying the statements of these participants is often difficult.

The *bhāṣya* discussions seem to be structured around two basic issues: what is given as established and whether or not that can be accepted. Thus, *sūtra*, *vārttika* or statement from Patañjali can be treated as given. Whether that can be accepted as established depends on the nature of doubts raised against it. If a doubt is satisfactorily resolved, the statement is accepted. If not, modifications are proposed, discussed and accepted. Patañjali begins the *Mahābhāṣya* by taking *atha śabdānuśāsanam* 'here commences the instruction of words' as a *pratīka*. Questions are then raised about the meaning of the word *śabda*, its nature (*svarūpa*) and the purpose (*prayojana*) of grammar (*śabdānuśāsana*). The discussion then moves to the nature of grammar. At a time when the discussion is progressing towards the meaning of a word as the subject-matter of grammar, Patañjali offers another *pratīka*, this time as a *vārttika* (*Mbh.* I:27):

> *siddhe śabdārthasambandhe*
> 'given that word (*śabda*), meaning (*artha*) and their inter-relationship (*sambandha*) is eternal (*nitya*) ...'

The discussion now centers on *nitya*, its sense (*nityatva*) and the types of eternality. The question of considering a word as *ākṛti* 'form class,' which offered the occasion for introducing this *vārttika* is taken up again. This discussion, too, proceeds with example and counter-example; one can find this pattern of argument throughout the *Mahābhāṣya*.

Patañjali should be commended for presenting the basic theoretical issues related to the grammar of Pāṇini in the *Paspaśā*. (For his views on grammar in detail see chapter 3.) I shall here present a summary of some issues raised. Patañjali first discussed word *(śabda)* as the subject-matter of grammar. This refers to the words both of Vedic and classical Sanskrit. An example of word in classical Sanskrit is offered: *gauḥ* 'cow, bull'. A question is raised whether what is perceived as having dew-lap (*sāsnā*), tail (*lāṅgūla*), hump (*kakuda*), hooves (*khura*) and horns (*viṣāṇa*) is the word *gauḥ*. The answer is no, since that is *dravya* 'thing'.[14] Does motioning (*iṅgita*), moving (*ceṣṭita*) or blinking eyes (*nimiṣita*), since they express meaning, constitute word? The answer again is no since those are actions (*kriyā*).[15] What about white (*śukla*), blue (*nīla*), brown (*kapila*), or brindled (*kapota*)? These are not words either as they are qualities (*guṇa*).[16] Can word be that which is a common property therein things and is not destroyed when they are destroyed? No, that is *ākṛti* 'class, universal'.[17] What then is word? Word is that, by which when uttered one perceives things having dew-lap, tail, hump, hooves and horns; that is, the thing cow,[18] or, word is sound (*dhvani*) by means of which meaning is comprehended.[19] Now, what about word being *ākṛti* (*jāti*) 'universal' or *dravya* 'thing'; it could be both.

[14] (*Mbh.* I:5) *atha gaur ity atra kaḥ śabdaḥ? kim yat tat sāsnā-lāṅgūla-kakuda-khura-viṣāṇy artharūpam sa śabdaḥ. nety āha; dravyam nāma tat.*

[15] (Ibid. I:6) *yat tarhi tad iṅgitaṃ ceṣṭitaṃ nimiṣitaṃ sa śabdaḥ. nety āha; kriyā nāma sā.*

[16] (Ibid.) *yat tarhi tac chulko nīlaḥ kṛṣṇaḥ kapilaḥ iti sa śabdaḥ nety āha; guṇo nāma saḥ.*

[17] (Ibid.) *yat tarhi tadbhinneṣv abhinnaṃ chinneṣv acchinnaṃ sāmānyabhūtaṃ sa śabdaḥ nety āha; ākṛtir nāma sā.*

[18] (Ibid. I:7) *kas tarhi śabdaḥ? yenoccāritena sāsnā-lāṅgūla-kakuda-khura-viṣāṇināṃ sampratyayo bhavati sa śabdah.*

[19] (Ibid.) *athavā pratītapadārthako loke dhvaniḥ śabdaḥ ity ucyate . . . tasmād dhvaniḥ śabdaḥ.*

It is in this context that the *vārttika siddhe śabdārthasambandhe* is introduced and the discussion turns to the word *nitya* 'eternal'. Patañjali states that the word *nitya* of the *vārttika* is synonymous with *siddha*. He illustrates this synonymity by these examples: *siddhā dyauḥ* 'heaven is eternal'; *siddhā pṛthivī* 'the earth is eternal' and *siddham ākāśam* 'the ether is eternal'. Answering the question of how one knows what is eternal, he says:[20] that which is *kūṭastha* 'fixed' and doesn't move from one state to another (*avicāli*) is *nitya*. Commentators call it *kūṭasthanityatā*. However, *siddha* may also denote things accomplished by means of an action. Consider these sentences: *siddhaḥ odanaḥ* 'the rice is cooked'; *siddhaḥ sūpaḥ* 'the broth is cooked' and *siddhā yavāgūḥ* 'the gruel is cooked'. So long as the word *siddha* is available in usage denoting something brought about by means of an action, it could not be treated as synonymous with *nitya* alone. Patañjali refuses to accept *nitya* as referring to *sādhya* 'to be accomplished by means of an action'.[21]

The discussion now focuses on a paraphrase of the *vārttika* accomplished by taking word (*śabda*) as referring to *ākṛti* 'form, class' or *dravya* 'thing', on the one hand, and the question of eternality (*nityatva*) on the other. The question of the difference between *ākṛti* 'form' and *jāti* 'class, universal' is also implied. The eternality of *jāti* can be understood but that of *dravya* is hard to comprehend. Patañjali starts by saying that *dravya* is *nitya* but *ākṛti* is not. He illustrates this by the example of gold (*suvarṇa*) which remains the same though its form changes from one ornament to another.[22] He then takes the position that *nitya* refers to a thing which remains fixed (*dhruva, kūṭastha*), is not modified, nor moves from one state to another; it sustains no loss or gain and retains its basic element (*tattva*) even when it is destroyed.[23] This retention can be compared with the notion of *pravāhanityatva* 'eternality in a continuum'[24] which is used in the context of speech which is passed from one generation to another. A word is spoken, and when spoken, brings about the understanding of meaning. The spoken word is thus the manifestation of the eternal characterized as *kūṭastha*. This is passed from generation to generation, still eternal, though in a continuum.

[20] (Ibid.:28) *nityaparyāyavācī siddhaśabdaḥ. kathaṃ jñāyate? yat kūṭastheṣv avicāliṣu bhāveṣu vartate. tad yathā-siddhā dyauḥ, siddhā pṛthivī, siddham ākāśam iti.*

[21] (Ibid.:28) *yāvatā kāryeṣv api vartate. tad yathā-siddhaḥ odanaḥ, siddhaḥ sūpaḥ, siddhā yāvāgūr iti. yāvatā kāryeṣv api vartate tatra kuta etan nityaparyāyavācino grahaṇaṃ na punaḥ kārye yaḥ siddhaśabda iti...siddha eva na sādhya iti.*

[22] (Ibid.:31) *...tathā suvarṇaṃ kayācid ākṛtyā yuktaṃ piṇḍaṃ bhavati...punarāvṛttaḥ suvarṇapiṇḍaḥ punar aparayākṛtyā yuktaḥ khadirāṅgārasavarṇe kuṇḍale bhavataḥ. ākṛtir anyā cānyā bhavati, dravyaṃ punas tad eva.*

[23] (Ibid.:31) *athavā nedam eva lakṣaṇaṃ-dhruvaṃ kūṭastham avicālyanapāyopajanavikāryanutpatyavṛddhyavyayayogi yat tan nityam iti. tad api nityaṃ yasmiṃs tatvaṃ na vihanyate.*

[24] See Cardona (1976:256).

It is clear from above that Patañjali does not accept word merely as *jāti*, *ākṛti*, *kriyā* or *guṇa*. For him, a word is that which, when uttered, brings about comprehension of meaning (*artha*). The word is thus *dhvani* but only for ordinary people. For grammarians, the real word is *sphoṭa* 'that by means of which meaning is made manifest'.[25] It is received by ears, perceived by *buddhi* 'mind, thought process' and reflected in sound (*dhvani*). This reflection in sound is not the reflection of meaning. Instead, it is the reflection of word. Meaning does not leave word (*Mbh.* I:510). Meaning is comprehended by word itself. The word is eternal and resides within us.

Patañjali quotes a hymn[26] (*RV.* 4.58.3) which characterizes word as a bull with four horns, three feet, two heads and seven hands. The bull has been tied in three places and is roaring. This bull is the great god who has made his abode within us mortals. In order to be one with this god one must study grammar.[27] It is stated that the four horns are *nāman* 'nominals', *ākhyāta* 'verbs', *upasarga* 'preverbs' and *nipāta* 'particles'. The two heads are the eternal word and the word in the form of sound. The seven hands are the seven triads of nominal endings (*vibhakti*). The bull is tied at the chest, throat and head. This idea of the great bull was further elevated to the status of *brahman* 'supreme being' characterized as the eternal word. This and the doctrine of *sphoṭa* have been discussed in detail in the *VP* of Bhartṛhari.

The basic purpose of a grammar, says Patañjali (*Mbh.* I:25) is to account for the words of a language, not by enumerating each one of them, but by writing a set of general (*sāmānya*) rules with related exceptions (*viśeṣa*). These rules must be based on generalizations abstracted from usage for which the language of the *śiṣṭas* 'learned' is the norm. Use of correct words brings merit (*puṇya*), though Patañjali seems to be making an additional proposal. That is, as word-by-word enumeration is not a good means (*upāya*) of understanding words, understanding them by means of incorrect words is equally futile. The mass of incorrect words is overwhelming and making generalizations based upon them is impossible. Hence, Patañjali recommends that for economy (*lāghava*)[28] one must study words by focusing on correct usage (see chapter 3 for details).

Patañjali, as explained above, closely associates word and meaning. In doing so, he was led to address the question of whether individual sounds carry any meaning. The discussion (*Mbh.* I:101-6) starts with the *vārttika*:

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[25] (Ibid.) ...*sphoṭaḥ śabdaḥ, dhvaniḥ śabdaguṇaḥ*...

[26] (Ibid.) *catvāri śṛṅgā trayo asya pādā dve śīrṣe sapta hastāso asya tridhā baddho vṛṣabho roravīti maho devo martyāṃ ā viveśa.*

[27] (Ibid.:17) *catvāri śṛṅgāṇi catvāri padajātāni nāmākhyātopasarganipātāś ca. trayo asya pādās trayaḥ kālāḥ bhūta-bhavisyad-varttamānāḥ. dve śīrṣe dvau śabdātmānau nityaḥ kāryaś ca. sapta hastāso asya sapta vibhaktayaḥ...mahān devaḥ śabdaḥ...mahatā devena naḥ sāmyaṃ yathā syād ity adhyeyam vyākaranam.*

[28] (Ibid.:24) *laghutvāc chabdopadeśaḥ. laghīyāñ śabdopadeśo garīyān apaśabdopadeśaḥ.*

> *arthavanto varṇadhātuprātipadikapratyayanipātānām ekavarṇānām arthadarśanāt.*

This *vārttika* argues that since a *dhātu* 'root', *prātipadika* 'nominal stem', *pratyaya* 'affix' or *nipāta* 'particle' consisting of a single sound segment is seen to carry a meaning, a single sound segment carries meaning. Further support to this argument is brought by a second *vārttika*:

> *varṇavyatyaye cārthāntaragamanāt.*

A single sound segment is meaningful because changing a sound segment brings about change in meaning. Thus, consider *kūpaḥ* 'water-well', *sūpaḥ* 'soup' and *yūpaḥ* 'ritual post' where changing *k*, *s* and *y* results in change of meaning. This *vārttika* seems to be arguing that the meanings of these individual words are carried by *k, s* and *y* respectively. Now consider the third *vārttika*:

> *varṇānupalabdhau cānarthagate.*

The argument that a single sound segment carries meaning can also be supported by the fact that removing a sound segment renders a sequence meaningless as far as the original meaning is concerned. Thus, removing *v* from *vṛkṣa* would remove the meaning 'tree'. Further support is forwarded by the following *vārttika*:

> *saṃghātārthavatvāc ca.*

A single sound segment carries meaning since it is part of a conglomeration which is meaningful. Thus, a conglomeration is meaningful because its parts are also meaningful. Or, a conglomeration is meaningless because its parts are also meaningless. A single sesame contains oil; hence, its conglomeration contains oil; but, just as a single blind person is not capable of seeing anything, so neither is a conglomeration of blind people. This shows that those parts whose conglomerations are meaningful are also meaningful.

Arguments next are advanced in favour of a conglomeration alone being meaningful. The *vārttikas* again summarize the arguments against the necessary background provided by the *Mahābhāṣya*. If one accepts that a single sound segment carries meaning, then operations applicable to meaningful items would obtain on individual sounds. An example in point is the introduction of *sU*, etc., and in consequence, the assignment of the term *pada* and the deletion of the final *–n*. At this point, a *vārttika* is introduced which asserts that since a single meaning can only be expressed by a conglomeration, *sU*, etc., cannot be introduced after individual sound segments:

saṃghātasyaikārthyāt sub abhāvo varṇāt.

This apparently was in response to the view that single sound segments carried meaning. The *vārttika* tries to remove the doubt that *sU*, etc., could thus be applied to individual sounds. Now consider the following *vārttika*:

anarthakās tu prativarṇam arthānupalabdheḥ.

Single sound segments are indeed meaningless since meaning does not obtain in each and every sound segment. Furthermore:

varṇavyatyayāpāyopajanavikāreṣv adarśanāt.

Here, original meaning is not seen to be impaired even when sound segments are transposed, deleted, added or replaced. Thus, *hiṃs* undergoes transposition in deriving *siṃha* 'lion' but there is no transposition of meaning. There is a deletion of *n* of *han* in deriving *hata* 'killed' but there is no deletion of meaning. In deriving *lavitum* 'for the purpose of cutting,' the *iT* has been added without any addition in meaning. Finally, the *h* of *han* is replaced by *gh* in deriving *ghātakaḥ* 'killer' but its original meaning has not been replaced. If individual segments were carrying any meaning, then their transposition, deletion, addition or replacement should also have resulted in the transposition, deletion, addition or replacement of meanings. This shows that individual segments do not carry any meaning.

The *bhāṣya* now, after presenting both positions, asks what view should be treated as correct. The answer, as shown in the real world, is both. Among students putting in equal effort and studying, some are successful, others not. By analogy, just because single sound segment is meaningful, everyone does not become meaningful. The rest do not carry any meaning. However, this may create difficulty with *kūpaḥ*, *sūpaḥ* and *yūpaḥ* in connection with which it was argued that the distinction in meanings of these three words was based on *k*, *s* and *y*. This would mean that their individual meanings are tied to individual sound segments which, in turn, become meaningful. This difficulty is removed by understanding these three words as three different conglomerates. Simply switching *k*, *s*, and *y* does not change the meaning of their respective conglomerates. If that was the case, since *ūpaḥ* is common to them all, quite a large segment of meaning of, for example, *kūpaḥ* should remain in *sūpaḥ* and *yūpaḥ* and vice versa. Since this is not the case, we understand these three words as separate conglomerations with separate meanings. A problem remains, however. The *bhāṣya* accepted that the meaning of *kūpaḥ* is the meaning of its *k*, and so on. This renders *ūpa* vacuous. The *bhāṣya* resolves this difficulty while discussing rule 1.2.45 *arthavad. . . .* There it states that sometimes one may find that a conglomeration gives a meaning which may not be available to its individual parts. Similarly, in regards to a chariot (*ratha*) or liquor (*surā*), the component parts of a *ratha*, for example, do not possess movement (*gati*) but only the conglomeration does so, while the various elements which are brought into making liquor are individually not intoxicating but their conglomeration is so. Thus it is not always the case that if the conglomeration is meaningful that the parts which compose it are also meaningful. In short, meaningfulness should be decided based upon *anvaya* 'concurrent presence' and *vyatireka* 'concurrent absence'. This extended discussion in the Indian grammatical tradition clearly shows both how the grammarians were concerned with theoretical issues which still interest contemporary linguists, as well as how they were fond of drawing analogies between the world of grammar and the outside world.

Since a grammarian believes in the authority of words as attested by usage (*loka*), the real world has prominence in the discussions of the *Mahābhāṣya*. It is not just a coincidence that Patañjali constantly brings the realities of the ouside world to bear upon the discussions of the inside world of grammar. There are numerous maxims (*nyāyas*) which Patañjali mentions in support of grammatical discussions. These maxims, aside from explaining a particular point of view, make the discussions livelier. Some of them are discussed below.

Consider the maxims: *takrakauṇḍinya*, *dhānyapalāla* and *devadattahantṛhanan (odyat)a* (*Mbh.* I:436). They concern general rules (*utsarga*), exceptions (*apavāda*) and their negation (*pratiṣedha*). With the understanding that an exception carves out the domain of application from within the domain of a general rule, let us investigate the meaning of these maxims. The maxim *takrakauṇḍinya* is referenced in the *Mahābhāṣya* (I:352) by *dadhi brāhmaṇebhyo dīyatām, takraṃ kauṇḍinyāya* 'let yoghurt be given to the *brāhmaṇas*; buttermilk to Kauṇḍinya'. Now, Kauṇḍinya, to whom buttermilk is supposed to be given, is also a *brāhmaṇa*. He, by being a *brāhmaṇa*, is entitled to the gift of yoghurt (*dadhi*). However, by being Kauṇḍinya, he is entitled only to the gift of buttermilk (*takra*). A conflict may arise here since he meets the condition of both gifts. Moreover, there is no indication whether Kauṇḍinya should be blocked from receiving *dadhi* forever. Can he be given yoghurt after he has been given buttermilk? Here, the general (*dadhidāna*) and specific (*takradāna*) are both concurrently present just as we see the grain (*dhānya*) in the husk (*palāla*).[29] There is a concurrent presence of the specific contained within the general (*dhānyapalālanyāya*). However, the general and the specific cannot be applied concurrently and since a specific provision in relation to a general would become meaningless unless it is used, the buttermilk supercedes the yoghurt, the grain wins over the husk. More clearly, in grammar, an exception blocks the general rule.

This blocking of a general by a related exception has been likened to the killing (*hanana*) of a general rule. Now, let us see what happens when an formulation, a *vṛtti* to follow is a must. Pāṇini may not have composed a *vṛtti* but he must have explained his *sūtras* by means of statements similar to *vṛtti*. The pre-Patañjalian authors of *vṛttis* include names such as Vyāḍi, Kuṇi and Māthura. Mīmāṃsaka discusses forty-six *vṛttis* in all, thirty-eight of them with the discussion of their authors.

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[29] For a detailed discussion see *Mbh.* I:57-58; also p. 259.

The *Kāśikāvṛtti* (*Kāśikā*) is regarded as the third most important grammatical text after the *Aṣṭādhyāyī* itself and the *Mahābhāṣya*. Commentators explain its name either by interpreting it as *kāśiṣu bhāvā* 'brought about at Kāśī' (now Varanasi) or as *kāśayati prakāśayati sūtrārthān* 'that which illuminates the meaning of *sūtras*'. The authorship of this *vṛtti* also has been debated. A majority of scholars consider it the work of Jayāditya and Vāmana (AD 7). There is also disagreement on who wrote what portions of this *vṛtti*. It is generally believed that the first five books were written by Jayāditya and the remaining three by Vāmana. However, there is much evidence, both external and internal, concerning the authorship which is conflicting; the dual authorship of the *Kāśikā*, though, is settled. These and other questions have been discussed in detail by Mahesh Dutt Sharma (1974) and Vedālaṅkāra (1977). Some of the following observations also come from these studies.

The opening stanzas describe the features of *Kāśikā* as being a summary of principal views scattered over *vṛttis, bhāṣya, dhātupārāyaṇa* 'listing of roots', and *nāmapārāyaṇa* 'listing of stems in groups', etc. Furthermore, it includes *iṣṭi* 'desiderata', *upasaṃkhyāna* 'addenda', *śuddhagaṇa* 'correct listing of *gaṇas*', unfolding of hidden meanings of *sūtras* (*vivṛtaghūḍhasūtrārtha*) and the derivation of forms (*rūpasiddhi*) constituting examples. We know from *Kāśikā* itself that it includes the *vārttikas* of Kātyāyana and the *iṣṭis* of the *Mahābhāṣya*. In addition, *Kāśikā* has its own *iṣṭis* and *vārttikas*. Its examples and counter-examples often remind one of the style of the *bhāṣya* where they are presented in view of arguments and counter-arguments. All this does not fit very well within the framework of *vṛtti* in the technical sense of the term. A *vṛtti* does not normally include *iṣṭis* and *upasaṃkhyāna*. Nor does it include *gaṇas*, let alone their corrected forms. *Kāśikā*, in view of its features, looks more like a condensed *bhāṣya*. Since *Kāśikā* is a fairly late text and clearly summarizes the principal views of diverse sources, because of the availability of materials and a desire to accommodate all of them, its content goes far beyond the expected content of a *vṛtti*. However, it still is a *vṛtti* since it accepts a *sūtra* as the *pratīka* for its discussion.

Kāśikā has often been charged with presenting *sūtras* with variant readings. It discusses 3,981 *sūtras* which also include *atha śabdānuśāsanam* and fourteen *Ss*. There are four major sources for variant readings: rule splitting (*yogavibhāga*), elevation of a *vārttika* to the level of a *sūtra*, inclusion of all or part of a *vārttika* in a *sūtra* and addition or deletion of certain items from a *sūtra*. Vedālaṅkāra (1977:350-1) lists fifteen *sūtras* where *yogavibhāga* is discussed by *Mahābhāṣya*; *Kāśikā* accepts nine *sūtras* and lists them as eighteen. Vedālaṅkāra argues that since *Kāśikā* did not accept other proposals of *yogavibhāga* and only accepted what *SP* was available from the tradition, the authors of *Kāśikā* did not introduce *yogavibhāga* by themselves. This is not acceptable. *Kāśikā* was well aware of the *Mahābhāṣya*, which means the authors of *Kāśikā* had the *Mahābhāṣya* available to them from the tradition. If they accepted only what was available from the tradition there is no reason why they should not have accepted the other instances of *yogavibhāga*. The logic that the edition of the *Mahābhāṣya* which the authors of *Kāśikā* may have had access to did not have *yogavibhāga*, and hence *Kāśikā* did not accept it, is hardly convincing. For, there are instances in *Kāśikā* where *yogavibhāga* ascribed to *kecit* 'someone' is referred to but obviously not accepted. This means that the authors of *Kāśikā* must have applied their own judgment as to whether or not to accept a particular *yogavibhāga*. Besides, listing a *sūtra* as split, at least for authors such as these, would amount to saying that they did the splitting.

There are ten instances where a *vārttika* has been listed by *Kāśikā* as a *sūtra* and sixteen instances where *Kāśikā* includes part of a *vārttika* in a *sūtra*. The variations caused by addition or deletion are numerous. The instances of *vārttikas* being listed as separate *sūtras* could clearly be labelled violations if it could be shown that deleting them would cause serious gaps in the functioning of the *Aṣṭādhyāyī;* gaps which could not be filled by accepting them only as *vārttikas*. I am not convinced that such gaps would result. The addition of a *vārttika* as part of a *sūtra* could still be treated as a violation, for a statement of the *vṛttikāra* could easily account for it. However, in some cases, *Kāśikā* has included *vārttikas* in *sūtras* for economy. A case, on this same ground, can also be made for instance where *Kāśikā* collapses *vārttikas* into one.

The same economy can be seen as the reason for adding elements to a *sūtra*. Consider as an example rule 3.1.126 *āsuyuvapirapilapi*. . . where an additional root *lapi* has been added. Patañjali does not discuss this rule. Haradatta's *PM* on 3.1.126 makes no comment. Jinendra's *Nyāsa* seems to be accepting the inclusion of *lapi*. The *SK* and *Tattvabodhinī* do not accept it. This rule introduces affix *ṆyaT* to derive forms such as *lāpyam*. Now, if this root is not included in this rule forms such as *lāpyam* would emerge by the introduction of *yaT*. The *ṆyaT* derivate *lāpyam* could never be derived. The addition of *lapi* to the rule is found in the *Cāndra-vyākaraṇa* (cf. 1.1.133 *āsuyu*. . . *lapi*. . .). Some treat it as an influence of *Cāndra* on *Kāśikā*, although this inclusion is perfectly in accord with *Kāśikā*'s stated goal of bringing information from elsewhere. *Kāśikā* simply wants to account for forms like *lāpyam*. Without the inclusion of the root *lapi* in the *sūtra*, this is not possible. This inclusion could be looked upon as useless if *lāpyam* did not exist in usage.

which obscure the understanding of issues symbolized by the statement from *Kāśikā*.

Mention must also be made of the *Bhāṣāvṛtti* of Puruṣottamadeva (AD 12), which draws heavily from *Kāśikā*, and the *Bhāgavṛtti* of Vimilamati (AD 8). This last is not available. Puruṣottama, as the name of his *vṛtti* suggests, only includes rules dealing with *bhāṣā* 'classical Sanskrit'. Specifically, he has excluded rules which deal with accent. Although he arranges the *sūtras* in eight books of four quarters each, he further groups the *sūtras* into sections with headings indicating the nature of rules and operations. He also includes *vārttikas*. One would find section headings such as *vṛddhyādisaṃjñāprakaraṇam* 'section dealing with the terms *vṛddhi*, etc.', *ghvādisaṃjñāprakaraṇam* 'section dealing with the terms *ghu*, etc.', *vacanaprakaraṇam* 'section dealing with number', *liṅgaprakaraṇam* 'section dealing with gender', *ādeśaprakaraṇam* 'section dealing with replacement', etc. Similarly, one can find statements indicating the end of the sections, but Puruṣottama is not consistent in this regard.

Puruṣottama has a real flavour for brevity, though he thus takes a lot for granted. He normally does not make explicit statements about *anuvṛtti* unless it is necessary. Often he presents the elements of *anuvṛtti* in the gloss of the *sūtra*. These glosses are worded in a manner that facilitates glossing individual items. Thus, a rule like 3.1.17 *śabdavairakalahābhra... karaṇe* can be glossed as: *ebhyaḥ kriyāyāṃ kyaṅ syāt* 'let there be *KyaṄ* after these when the sense is 'doing, making'. Note that the rule uses *karaṇa*, which is also a technical term denoting 'instrument'. Puruṣottama, instead of saying that *karaṇa* does not refer to instrument, straightforwardly glosses it as *kriyāyām*. He also includes *KyaṄ* in the gloss rather than saying, in addition, that *KyaṄ* is carried. In the next rule (3.1.18 *sukhādibhyaḥ kartṛvedanāyām*), he simply glosses *kartṛvedanāyām* as *kartur anubhave* 'when the agent experiences'. Puruṣottama does not deem it necessary to indicate that *karman* is carried as modifier to items enumerated by the rule. Furthermore, he does not take a lengthy route to explain *kartṛvedanāyām* as *Kāśikā* does: ... *vedanāyām arthe' nubhave ... vedayituś cet karttuḥ sambandhīni sukhādīni bhavanti* 'in the sense of *vedanā*, i.e. *anubhava* '(experiencing) ... provided *sukha* 'pleasure', etc., are related to the agent's own experiencing'. Puruṣottama simply says: *ebhyaḥ kartur anubhave kyaṅ syāt* 'let there be *KyaṄ* after these when the agent's own experiencing (is being expressed)'. Mark that *Kāśikā* uses *vedanā*, glosses it as *anubhava*, then interprets it as locative leading it to say *anubhava*. *Kāśikā* also adds *arthe* 'in the sense of', which Puruṣottama does not see as necessary, since *anubhave*, in the locative, would automatically account for that.

Puruṣottama normally does not offer counter-examples. This is in consonance with his practice of not explaining why a particular form is used in the *sūtra* in the way in which it is used. Counter-examples cited by other commentarial works anticipate such questions. Puruṣottama mentions *vārttikas* without mentioning their source, though occasionally he cites sources such as *Kātyāyana* (p. 124), *gaṇasūtra* (p. 184), *eke* 'someone' (pp. 192, 209), *smṛti* 'tradition' (pp. 201, 205), Vararuci (p. 227) and Saunāga (p. 435). The *Bhāṣāvṛtti* examples are more varied and have been chosen for clarity of structure and frequency in usage. Puruṣottama s paraphrases are terse and economical. As already stated, they take much for granted. Since he also avoids separate mention of *anuvṛtti* and counter-examples, it occasionally becomes difficult to understand the exact meaning of his paraphrases. He makes full use of the *Mahābhāṣya* but shies away from theoretical statements. In summary, he tries to explain the *sūtras* with straightforward paraphrases using minimum of words. His work can serve as a ready reference for the meaning and examples of the *sūtras*, though it can be used only by those who are well versed in the *Aṣṭādhyāyī*.

The *Rūpāvatāra* of Dharmakīrti (AD 11) is the oldest extant text of the *prakriyā* tradition.[32] By this time the focus of grammatical study had changed from interpretation to application. Furthermore, study of grammar had reached a stage where an easier means of teaching was felt to be required. Thus, the second opening verse of *Rūpāvatāra* gives 'facilitating the understanding of beginners' as goal. As a consequence, efforts were undertaken to limit the number of *sūtras* under discussion. Since the focus had shifted to application, an indifference towards finer details of interpretation was also witnessed. The same goes for counter-examples. What we see here as strikingly different from the *vṛttis* is the lack of details concerning interpretation and an abundance of details concerning derivation. In the process, taking many things for granted, *Rūpāvatāra* becomes very economical, though its style of brevity is altogether different from the non-*prakriyā* texts. It discusses only 2,664 rules but its examples number many times more. Its most effective means of reducing the number of *sūtras* under discussion is to exclude rules dealing with accent and Vedic Sanskrit.

It was again due to change in emphasis that listing of *sūtras* was done in view of operational topics and contexts. The Pāṇinian order of rule listing was abandoned. The notion of *prakaraṇa* 'context' in Pāṇini was thus modified. The Pāṇinian *prakaraṇa* was conceived in view of physical placement of rules, their interpretation and application especially as it related to context sharing (*ekavākyatā*) among rules. The notion of *prakaraṇa* in the *prakriyā* tradition was strictly conceived in view of particular derivational types. Since the Pāṇinian order of rules was disturbed, elements of *anuvṛtti* had to be supplied by statements. The *prakriyā* statements were not worded like *vṛttis*. In addition to giving paraphrases of the *sūtras*, they were worded so as to introduce operational details and clues. The *prakriyā* statements introduced rules as they became operative in a given operation on a given input. Paraphrases were given such that the basic meaning of a rule was understood and the context of an operation became clear.

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[32] *Rūpāvatārah* (I:XVI).

Rūpāvatāra consists of two parts, the first being divided into eight *avatāras* 'manifestations': *saṃjñā* 'technical terms', *saṃhitā* 'close proximity between sounds', *vibhakti* 'nominal inflection', *avyaya* 'indeclinable', *strīpratyaya* 'feminine affixes', *kāraka*, *samāsa* 'compound' and *taddhita* 'secondary suffixes'. It is interesting to note that the first *avatāra* deals with terms strictly limited to *saṃhitā;* other technical terms of the grammar are introduced if and when they become necessary. The *pratyāhāra-sūtras* also had to be included here for the same reason. The second part of *Rūpāvatāra* has three major *paricchedas* 'divisions': *sārvadhātuka* (3.4.113 *tiṅśit sārvadhātukam*), *ārdhadhātuka* (3.4.114 *ārdhadhātukaṃ śeṣaḥ*) and *kṛt* (3.1.93 *kṛd atiṅ*). Each division is further classified into *prakaraṇas* 'sections'. The division of this second part into three sections is clearly based on the classification of affixes introduced after verbal roots. The entire second part is presented under the general title of *dhātupratyayapañcikā*.

Rūpāvatāra closely follows *Kāśikā*, although its paraphrases are much simpler. Its examples have diverse sources: they could be from *Kāśikā*, the *Mahābhāṣya* or later classical literature. The examples, also, have been selected for derivational reasons. Thus, an example which shows clearly the application of a given rule would be preferred over one which may involve other applications. Also, an example which clearly blends in with the discussion of a *vārttika* would be preferred over one which does not. *Rūpāvatāra,* in addition to including *vārttikas,* also includes *ślokavārttikas, iṣṭis* and summary verses relating to examples and grammatical operations. It also has *kārikās* 'verses' from the *Vākyapadīya* of Bhartṛhari. These materials are incorporated mainly as references, often with examples. Much of their meaning and implication, however, is not clarified. Although *Rūpāvatāra* covers quite a few Pāṇinian rules with copious examples and *vārttikas,* it did not attain much popularity, mostly due to over-simplification; still, it was a very successful attempt at *prakriyā*.

A relatively mature form of *prakriyā* is found in the *Prakriyā-kaumudī* (*PK*) of Rāmacandra (AD 14). It not only standardized the format of *prakriyā* texts, but also served as a link between the old school of grammar and the new. It was heavily influenced by *Kāśikā* and also·borrowed from other systems of grammar. Rāmacandra not only left out many *sūtras* of the *Aṣṭādhyāyī*, but also refrained from explaining others. However, the number of *sūtras* in the *PK* is far greater than in the *Rūpāvatāra*. Hence, it is not surprising to find that Rāmacandra accepts the following in one of his later verses.

> *ānantyāt sarvaśabdā hi na śakyante' nuśāsitum/*
> *bālavyutpattaye' smābhiḥ saṃkṣipyoktā yathāmatiḥ//*
> 'Because of their being infinite, all words are not possible to be instructed; (therefore) they have been discussed by me in summary as I see fit for the benefit of making beginners conversant (in grammar).'

This verse attests to the idea of simplification which I have already identified as one of the motives behind the development of the *prakriyā* texts.

Rāmacandra, similarly to Dharmakīrti, focuses on *sūtras* dealing with classical Sanskrit. However, he has a small section at the end dealing with *prakriyā* in Vedic. In addition, many Vedic rules have been included elsewhere in the work, according to the context. The division of sections is also elaborate but does not vary in substance from the *Rūpāvatāra*. For example, the first section dealing with *saṃjñā* includes many more rules dealing with the technical terms but the goal is still the same: to focus on those *saṃjñā*s which may be beneficial to *sandhi* (*sandhyupayogin*). Rāmacandra does not follow the arrangement of *Rūpāvatāra* when it comes to dealing with the derivation of forms ending in *tiṄ* (3.4.78 *tiptasjhi. . .*). The *tiN* are a set of twenty-one affixes ruled as replacements for abstract suffixes generally referred to as *LA*. *Rūpāvatāra* has two major sections: *sārvadhātuka* and *ārdhadhātuka*. This division does not bring out the features of verbal paradigms clearly. Rāmacandra, instead, follows a different route. He discusses the verbal paradigms with reference to the grouping (*gaṇa*) of roots and whether or not they are marked for *parasmaipada, ātmanepada* or both terminations. This arrangement became standard for later *prakriyā* texts. Rāmacandra also was careful about how and when to introduce a *sūtra*. This resulted in the rooting out of repetition in the listing of *sūtras*; the *Rūpāvatāra* had had repetition in abundance.

Rāmacandra takes a lot for granted. His explanations of *sūtras* are very brief and his statements concerning the context of a *sūtra* or its application are still briefer. His examples are not numerous, and when discussing derivations, he takes many details as understood. *Rūpāvatāra* provides better explanations, however simplistic they may be. However, Rāmacandra's organization is very good. It was the lack of explanatory details plus the influence of other grammatical systems which subjected Rāmacandra to severe criticism by Bhaṭṭoji Dīkṣita. The *PK* was saved from still more violent criticism by its commentary, the *Prasāda* by Viṭṭhala, the grandson of Rāmacandra. It is true that *Rūpāvatāra* and *PK* represent pedagogical texts which lack the depth of *Kāśikā*, but they became popular. The *PK*, even though harshly criticized for some of its interpretations, became the standard for Bhaṭṭoji's *SK*, the text which represents the peak of the *prakriyā* tradition.

Bhaṭṭoji's *SK* replaced *PK* as the pedagogical standard. Its scope was wider, including all of Pāṇini's rules. Its detailed interpretation and *prakriyā* was not provided to ease the teaching of grammar but to enhance the understanding of grammar as such. All it shared with *PK* was format. Bhaṭṭoji had an eye for meticulous detail and interpretation. It is this quality that makes *SK* the standard text for studying Pāṇini. It overshadowed not only *Kāśikā* but even the *Aṣṭādhyāyī* itself, sparing the *Mahābhāṣya* only because *SK* closely follows its interpretations. The *SK* brings the grammatical literature that began with Patañjali full circle. Bhaṭṭoji (*SK*, I: 1) states in his opening verse that 'he is making the *SK* after having paid obeisances to, and having contemplated the sayings of, the three sages'.

It has been stated that the *SK* follows the organizational format of the *PK*. However, since Bhaṭṭoji was not simply writing a pedagogical text, the format was further refined. For example, he adds a section of *paribhāṣā* after *saṃjñā*. He follows Rāmacandra's arrangement in discussing *sandhi*, but adds a section of *prakṛtibhāva* 'non-*sandhi*'. The arrangement of rules dealing with compound formation is also elaborate. He adds two additional sections: *sarvasamāsaśeṣa* 'residue of compounds' and *samāsāśrayavidhi* 'operations with compound as locus'. Bhaṭṭoji also introduces here *ekaśeṣa* 'retention of one' as a separate section, since he considers it one of the elliptical formations (*vṛttis*). Since the *SK* treats all the rules, the arrangement of *taddhita* (4.1.76 *taddhitāḥ*) is also elaborate. Here, they are organized in sections following major affixes.

Bhaṭṭoji has organized his *SK* into two parts: the first part deals with *sandhi*, *samāsa* and affixes introduced by rules in books four and five of the *Aṣṭādhyāyī*. The second part deals with affixes introduced in the third book of the *Aṣṭādhyāyī*. In addition, Bhaṭṭoji also has sections on Vedic as well as accents of affixes, compounds and roots. What is surprising is his inclusion of two sections, one dealing with the *Uṇādi* affixes and the other dealing with the *Phiṭsūtras* (see chapter 2 for details). Normally, one would not expect these listings as part of the main text. The fact that Bhaṭṭoji interrupts his discussion of *kṛt* (3.1.93 *kṛd atiṅ*) affixes to accommodate *Uṇādi* is most surprising. They are not related to verbal derivatives only; why didn't he put them right after the *taddhitas*? However, locating the *Phiṭsūtras* close to the sections dealing with accent is not out of place since they deal with accent of nominal stems.

Bhaṭṭoji, in the second part, proceeds with the description of verbal paradigms arranged according to the classification of roots in ten *gaṇas* 'groups'. This follows Rāmacandra's procedure, but Bhaṭṭoji's treatment is more comprehensive. He provides nearly every significant detail ranging from classification to meanings and derivation. A discussion of rules dealing with *ṆiC* 'causative', *saN* 'desiderative', *yaN* 'intensive', deletion of *yaṄ* and denominatives follows. Bhaṭṭoji then brings the discussion of *ātmanepada* 'middle' and *parasmaipada* 'active' suffixes. The impersonal (*bhāva*), passive and reflexives follow. The *tiṄ* affixes are classified in two sets with the first nine termed *parasmaipada* and the remaining nine *ātmanepada* (1.4.99 *laḥ parasmaipadam*; 1.4.100 *taṅānāv ātmanepadam*). These two sections of *ātmanepada* and *parasmaipada* principally discuss rules which allow or disallow the placement of *tiṄ* affixes. The earlier treatments of *tiṄ* took this for granted and focused on verbal paradigms. The same goes for the treatment of *LA* 'abstract affixes *LAṬ*, etc.'. Affixes denoted by the abbreviatory term *tiṄ* and classified as *parasmaipada* or *ātmanepada* are replacements of *LA*. The section dealing with *kṛt* affixes, as I have mentioned, is interrupted by the *Uṇādi* section. Prior to *Uṇādi*, this section deals with *kṛtya* (3.1.95 *kṛtyāḥ*) and other *kṛt* affixes. Affixes *tumUN*, *GHaṄ*, *Ktvā* and *ṆamUL*, etc., follow *Uṇādi*.

Bhaṭṭoji strived to include practically everything essential for understanding the *sūtras*. If one rearranges his treatment in Pāṇini's original order and edits some remarks to fit in place, one can have another *vṛtti* parallel to *Kāśikā*. This indicates that the *SK* is a vastly different text from the others in the *prakriyā* tradition. Bhaṭṭoji accepts the three sages, especially Patañjali, as authority (*pramāṇa*) although his work has also benefited from *Kāśikā* and *PK*. He often identifies statements which form part of *Kāśikā* but are not found in the *Mahābhāṣya*. Bhaṭṭoji accepts things from *Kāśikā* but rarely when they are not in consonance with Patañjali.[33]

The *SK* draws its examples from the traditional sources which includes *Kāśikā*, although Bhaṭṭoji tries to find examples, especially for rules dealing with classical Sanskrit, from literature. Many of the examples have been cited in modified form simply to economise the listings. Thus, instead of listing *grāmam adhiśete* 'he is sleeping in the village' and *grāmam adhivasati* 'he is living in the village,' he will simply list the verbal forms. He also follows the *PK* in relating examples which deal with Viṣṇu and Kṛṣṇa. Thus, where *Kāśikā* has *tiṣṭhate kanyā chātrebhyaḥ* 'the girl is waiting for the students' and *madhu atra* 'there is honey here,' *SK*, like *PK*, has *kṛṣṇāya tiṣṭhate gopī* 'the *gopi* is waiting for Kṛṣṇa' and *cakrī atra* 'Viṣṇu is here'. The Vedic examples have been taken from Saṃhitās, Brāhmaṇas and Āraṇyakas, but Bhaṭṭoji relies mostly on the *Mahābhāṣya* and *Kāśikā*.

The number of *vārttikas* used in the *SK* is comparatively less than the *Kāśikā*. It is believed that since the focus was on *prakriyā*, only those *vārttikas* were used which were directly related to examples. Mahesh Dutt Sharma (1974:144) observes wherever *Kāśikā* refers to a *vārttika* in its citation form, *SK* refers to the same in paraphrase. Conversely, wherever *Kāśikā* does not refer to a *vārttika* in citation, *SK* does so. Bhaṭṭoji has used the

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[33] See Mahesh Dutt Sharma (1974: 91-111) for details.

vārttikas to facilitate the *prakriyā* and rarely takes any steps which may cloud their identity. Thus, practices such as elevating a *vārttika* to the status of a *sūtra*, reading a part of it in the body of a *sūtra* or reading a single *vārttika* as two or more are seldom found. It is also known that if something cannot be accounted for by *sūtra*, *vārttika* or *bhāṣya*, *Kāśikā* would formulate its own *vārttika* or *iṣṭi*. Bhaṭṭoji normally refrains from doing so. Instead, he tries to resort to some analytical means.

Bhaṭṭoji generally gives importance to the views of Patañjali. When he accepts things from other commentaries he is very careful. Let us examine the following rules.

> 2.2.15 *tṛjakābhyāṃ kartari*
> 'a word which ends in genitive (*ṣaṣṭhī*) is not combined with another word which underlies a form in *tṛC* or *aka* and denotes *kartṛ* 'agent'
>
> 2.2.16 *kartari ca*
> 'a word which ends in genitive and denotes *kartṛ* is not combined with another word which underlies a form in *aka*'
>
> 2.2.17 *nityaṃ krīḍājīvikayoḥ*
> 'a word which ends in genitive is obligatorily combined with another word which underlies a form in *aka* when the compound denotes *krīḍā* 'sport' or *jīvikā* 'livelihood'

Kāśikā and Bhaṭṭoji interpret these rules differently. Specifically, *Kāśikā* treats *kartṛ* as modifier (*viśeṣana*) of *ṣaṣṭhī* in 2.2.15 and of *tṛC* and *aka* in 2.2.16. That is, according to *Kāśikā*, the word which ends in genitive should also be expressing *kartṛ*. The expression of *kartṛ* is not seen as a condition for genitive in 2.2.16. Bhaṭṭoji, however, does the opposite. He requires that the word which underlies a form in *tṛC* or *aka* must also express *kartṛ* in 2.2.15. Treating *kartṛ* as a modifier of *tṛC* is problematic. A form ending in *tṛC* obligatorily denotes *kartṛ*. Why should one further modify it with *kartṛ*? Pāṇini may not have intended it. Bhaṭṭoji hastens to add that since *tṛC* already denotes *kartṛ*, only *aka* should be modified by *kartṛ*. *Kāśikā*, perhaps to avoid this, made *kartṛ* a modifier of genitive. But *Kāśikā* runs into problems too. It cannot find any example for a string of words where one ends in genitive and denotes agent, and the other underlies a form in *tṛC*. Such examples are impossible as *tṛC* denotes agent, which genitive cannot. It would be duplication. If one says that the two forms will be expressing different agents then the question of their forming a compound would not arise. They would not be syntactically relatable with each other. *Kāśikā* says that *tṛC* is used in 2.2.15 for *anuvṛtti* to subsequent rules. The interpretations of both *SK* and *Kāśikā* are problematic. *SK*, however, can offer examples and show the application of this rule. *Kāśikā* has to say that Pāṇini used *tṛC* not for use in 2.2.15 but for use in 2.2.16 and 2.2.17.

Either interpretation has consequences for 2.2.16 and 2.2.17. *SK* does not consider the purpose of *tṛC* beyond 2.2.15; *Kāśikā* carries it along with *aka*. Since it modifies *tṛC* and *aka* here with *kartṛ*, however, *Kāśikā*, like *SK* has to accept that since *tṛC* expresses *kartṛ*, only *aka* is supposed to be modified by *kartṛ*. To sum up, *SK* and *Kāśikā* interpret these rules inversely. That is, *SK* interprets rule 2.2.15 the way *Kāśikā* interprets 2.2.16 and vice versa. *SK* seems logical as well as economical since it does not have to carry *tṛC* to 2.2.16-17. Furthermore, it does not have to maintain as *Kāśikā* does in the case of 2.2.17, that examples of *tṛC* denoting 'sport' and 'livelihood' do not exist.

The *Mahābhāṣya* does not help much as it does not discuss these rules. However, under 2.2.14 (*Mbh.* II:685), it offers examples parallel to those Bhaṭṭoji cites under 2.2.15. The same type of examples are cited by *Kāśikā* under 2.2.16. Bhaṭṭoji got his clues from Haradatta's *PM* 2.2.15:

> *atha kasmād viparyayo nāśrīyate-iha tṛjakaviśeṣaṇaṃ*
> *kartṛgrahaṇam uttaratra ṣaṣṭhīviśeṣaṇam; evaṃ*
> *tṛjgrahaṇaṃ na vaktavyaṃ bhavati ...*
> 'how come inversion is not resorted to: *kartṛ* is used here as a modifier of *tṛC* and *aka*; subsequently as a modifier of *ṣaṣṭhī*; this way, it will not be necessary to state that '*tṛC* is used for (*anuvṛtti*) in subsequent *sūtras*'.'

Note, however, that *SK* (3807) on Pāṇini's 6.2.73 *ake jīvikārthe* offers *ramaṇīyakarttā* 'one who decorates' as an example, a word underlying a stem in *tṛC* and denoting *jīvikā* 'livelihood'. It states that this compound is derived by the application of 2.2.17. Recall that *SK* does not accept the *anuvṛtti* of *tṛC* beyond 2.2.15 and *Kāśikā* says that there are no examples. Two questions: (*a*) how can Bhaṭṭoji's interpretation of 2.2.17 derive *ramaṇīyakarttā* and (*b*) where does this example come from? The source is *Kāśikā* itself. Note that this part of *Kāśikā* is supposed to have been written by Vāmana and not by Jayāditya, who is supposed to have written the *vṛtti* of the section containing rules 2.2.15-17. Note also that Bhaṭṭoji takes this example from *Kāśikā*. Furthermore, he criticizes *Kāśikā*'s interpretation of 2.2.15 in his *Śabdakaustubha.*

Bhaṭṭoji has criticized *Kāśikā* whenever he finds something against the *Mahābhāṣya*. Consider the following rule.

> 3.2.78 *supy ajātau ṇinis tācchīlye*
> 'affix *ṆinI* is introduced after a verb root when a word denoting something other than *jāti* 'class' co-occurs and the derivate denotes *tācchilya* 'one's nature'

An example offered by *Kāśikā* is *uṣṇabhojī* 'he whose nature it is to eat warm food'. *Kāśikā* thinks that since Pāṇini uses the word *sUP* explicitly rather than bringing it by *anuvṛtti* from the earlier rule, this must have some special purpose to it. That purpose, according to *Kāśikā*, is to stop the *anuvṛtti* of *upasarga* 'preverb'. That is, since *sUP* and *upasarga* were both carried to 3.2.77 from 3.2.76, carrying *sUP* from 3.2.77 to 3.2.78 would also require carrying *upasarga* which Pāṇini did not wish to do. Consequently, Pāṇini used *sUP* explicitly in 3.2.78. However, there are examples such as *udāsāriṇyaḥ* and *pratyāsāriṇyaḥ* where suffix *ṆinI* occurs after verbal root *āsṛ* 'to come' used with the preverbs *ut* and *prati* respectively. These derivates, according to *Kāśikā*'s interpretation of 3.2.78, cannot be explained. Consequently, *Kāśikā* introduces its own *vārttika: utpratibhyām āṅi sartter upasaṃkhyānam* 'a statement should be made to account for *āsṛ* preceded by *ut* and *prati*'.

Bhaṭṭoji insists that this interpretation of *Kāśikā*, which has also been followed by Haradatta and Mādhava, the author of the *Dhātuvṛtti*, should be disregarded as it is against the interpretation of the *Mahābhāṣya* (*SK* IV:73): *iha vṛttikāreṇopasargabhinna eva supi ṇinir iti vyākhyāya utpratibhyām āṅi sartter upasaṃkhyānam iti paṭhitam. haradattamādhavādibhiś ca tad evānusṛtam etac ca bhāṣyavirodhād upekṣyam* 'here the author of the *vṛtti*, having analysed the *sūtra* as meaning 'verb root without a preverb when co-occurring with a *pada* ending in *uSP*', reads that 'a statement should be made to account for *āsṛ* preceded by *ut* and *prati*'. This has also been followed by Haradatta and Mādhava, etc. For reasons of opposition to the *Mahābhāṣya* this should be disregarded. The *Mahābhāṣya* maintains that *sUP* is used in 3.2.78 to indicate that in this rule 'a co-occurring word ending in *sUP*' alone is the condition. Bhaṭṭoji provides examples such as *anuyāyin* 'follower', etc., where affix *ṆinI* can be found after a verb root used with a preverb.

It has been stated that the tradition of *prakriyā* began with pedagogy as its goal although Bhaṭṭoji's goal was not exactly the same. One can still think that he shared the goal of focusing on derivation and presenting rules in an order most conducive to that. This indeed was the purpose behind rearranging the Pāṇinian rules. It is surprising to learn that except for ease in *prakriyā* no other reason has been given by the tradition for the new *sūtra* arrangement. The tradition has resisted anything not in consonance with Pāṇini. It has also discussed practically everything relevant to the *Aṣṭādhyāyī* in particular and grammar in general. No one knows why the tradition did not voice any resistance to this new order of rules. I consider the *prakriyā* rule order, at best, unfortunate.

As already stated, *SK* has enjoyed immense popularity. Bhaṭṭoji himself wrote a commentary *Prauḍhamanoramā* on the *SK*. Another commentary *Bālamanoramā* by Vāsudeva Dīkṣita (AD 18) followed. Later, Jñānendra Saraswatī wrote a very good commentary on *Prauḍhamanoramā* under the title of *Tattvabodhinī*. *Śabdenduśekhara*, both long (*bṛhat*) and short (*laghu*) versions, are two very learned commentaries on *SK* by Nāgeśa. There have also been three separate versions of the *SK*: a *sāra* 'summary' and a *laghu* version by Varadarāja, and a *madhya* 'medium length' version by Rāmaśarman (AD 17). The *laghu-kaumudī* still enjoys popularity among beginners.

The *Aṣṭādhyāyī* was not formulated for teaching Sanskrit. This does not mean that it cannot be used for learning Sanskrit. In fact, it has been, and to a lesser degree still is, being used for this purpose. The *SK* and its various abridged versions are still used for teaching Sanskrit in traditional circles. The claim that *prakriyā* texts made the derivational process easier to comprehend can be defended. However, to defend it at the expense of the *Aṣṭādhyāyī* is not acceptable. First of all, the new order of grammatical works takes a lot for granted, especially things like the function of rule 1.4.2 *vipratiṣedhe...* where any change in the Pāṇinian order of rules is crucial. Secondly, this new order obscures some basic distinctions Pāṇini intended to maintain. An example in point is the treatment of *kāraka* and *vibhakti* as one in the *prakriyā* texts. Finally, the new arrangement deals perhaps a serious blow to the sophisticated derivation mechanism the *Aṣṭādhyāyī* so meticulously presents. A case in point is the process of *anuvṛtti* and what I discuss in later chapters as reference to antecedent.

2

The *Aṣṭādhyāyī* and its Related Texts

The *Aṣṭādhyāyī* consists of about four thousand *sūtras* arranged in eight chapters *(adhyāya)* of four quarters *(pāda)* each. The number of *sūtras* in the chapters or quarters varies in accordance with the topic and organizational constraints. In order to clearly understand the organizational structure of the *Aṣṭādhyāyī* itself, we must first consider some materials which are often treated as separate from the main text but nevertheless are necessary for its understanding. These are the *Śivasūtra* (*Śs*), the *Dhātupāṭha* (*DP*), the *Gaṇapāṭha* (*GP*), the *Uṇādisūtra* (*Us*), the *Phiṭsūtra* (*Phs*) and the *Liṅgānuśāsana* (*Lā*).

(a) The *Śivasūtra* (*Śs*)

The *Śs* is a set of fourteen aphorisms enumerating the sound segments *(varṇasamāmnāya)* of the Sanskrit language in the order most conducive to forming the abbreviatory terms *(pratyāhāra)* used in the grammar.

1. a i u Ṇ
2. ṛ ḷ K
3. e o Ṅ
4. ai au C
5. h^a y^a v^a r^a Ṭ
6. l^a Ṇ
7. ñ^a m^a ṅ^a ṇ^a n^a M
8. jh^a bh^a Ñ
9. gh^a ḍh^a dh^a Ṣ
10. j^a b^a g^a ḍ^a d^a Ś
11. kh^a ph^a ch^a ṭh^a th^a c^a ṭ^a t^a V
12. k^a p^a Y
13. ś^a ṣ^a s^a R
14. h^a L

An item indicated here by capital letters is traditionally termed an *it* and is not treated as an item in the list. However, *its* may serve as the final *(antya)* for any initial *(ādi)* element which, joined together, forms an abbreviatory term *(pratyāhāra)* to represent the initial and all intervening elements.[1] For example, the initial *a* of the first *Śs* can join the final *C* of *Śs* four to form the abbreviatory term *aC* signifying *a* and all intervening non-*it* items. Thus, *aC* denotes all the vowels. Similarly, *aL* designates the totality of vowels and consonants.

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[1] see 1.1.71 *ādir antyena sahetā.*

Another symbol, which is also not an item on the list, is the *a* used with the consonants of *Śs* five through fourteen. This *a* facilitates the pronunciation of the consonants in question. I have indicated the occurrences of this *a* by raising it. The *a* of *Śs* six is treated by *Kāś*[2] and *SK*[3] as an *it* in order to form an abbreviatory term *rÃ* which would denote *r* and *l*. I represent this *Ã* as a non-*it* because treating it otherwise would be non-Pāṇinian.

Pāṇini's method of forming abbreviatory terms with the help of the *Śs* can yield a vast number of abbreviations. However, the *Aṣṭādhyāyī* uses only 41 abbreviations, summarized in the following *śloka-vārttika*[4]:

> *ekaśmān ṅañaṇavaṭā dvābhyāṃ ṣas tribhya eva kaṇamāḥ syuḥ/*
> *jñeyau cayau caturbhyo raḥ pañcabhyaḥ śalau ṣaḍbhyaḥ//*
> "one (abbreviatory term) each with *Ṅ*, *Ñ*, Ṇ, *V*, Ṭ; two with Ṣ, three each with *K*, Ṇ, *M*; four each with *C*, *Y*; five with *R* and six each with *Ś*, *L*"

Thus:

1. *eṄ*, *yÑ*, *aṆ*, *ch*^{a}*V*, *aṬ*
2. *jh*^{a}*Ṣ*, *bh*^{a}*Ṣ*
3. *aK*, *iK*, *uK*; *y*^{a}*Ṇ*, *aṆ*, *iṆ*, *ṅ*^{a}*M*, *aM*, *y*^{a}*M*
4. *aC*, *eC*, *aiC*, *iC*; *m*^{a}*Y*, *jh*^{a}*Y*, *kh*^{a}*Y*, *y*^{a}*Y*
5. *ś*^{a}*R*, *y*^{a}*R*, *jh*^{a}*R*, *kh*^{a}*R*, *c*^{a}*R*
6. *jh*^{a}*Ś*, *j*^{a}*Ś*, *b*^{a}*Ś*, *aŚ*, *h*^{a}*Ś*, *v*^{a}*Ś*; *aL*, *h*^{a}*L*, *s*^{a}*L*, *v*^{a}*L*, *r*^{a}*L*, *jh*^{a}*L*

If we treat the *a* of *Ss* six as an *anunāsika it*, as has been advocated by *Kāśikā* and *SK*, we will get an additional abbreviation, *rÃ*. There are two more abbreviatory terms, *c*^{a}*Y* and *ñ*^{a}*M*, the first of which is attested by *vārttika* 3 *ad* 8.4.88 (*cayo dvitīyaḥ śari pauṣkarasādeḥ*)[5] and the second[6] by the *Uṇādisūtra* (1/114) *ñamantāḍ ḍaḥ*. This brings the total to 44. The following chart shows these abbreviatory terms with their initial item (*ādi*), listed in the first vertical column, as well as their final element (*it*), listed in the first horizontal column.

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[2] *Kāś.* (I:53) *hakārādiṣv akāra uccāraṇārthaḥ, nānubandhaḥ. lakāre tv anunāsikaḥ pratijñāyate...*

[3] *SK* (I:4) *...eṣām antyā itaḥ. laṇ-sūtre 'kāraś ca. hakārādiṣv akāra uccāraṇārthaḥ.*

[4] see *Kāś.* (I:59-60).

[5] *Mbh.* (3:508).

[6] *SK* (IV:166).

initial (*ādi*) final element (*it*)

	Ā	K	Ṅ	C	Ṭ	Ṇ	M	Ñ	Ṣ	Ś	V	Y	R	L
a		aK		aC	aṬ	aṆ	aM			aŚ				aL
i		iK		iC		iṆ								
u		uK												
e			eṄ	eC										
ai				aiC										
h										h^{a}Ś				h^{a}L
y						y^{a}Ṇ	y^{a}M	y^{a}Ñ				y^{a}Y	y^{a}R	
v										v^{a}Ś				v^{a}L
r	rĀ													r^{a}L
m												m^{a}Y		
ṅ							ṅ^{a}M							
bh									bh^{a}Ṣ	bh^{a}Ś				
jh									jh^{a}Ṣ	jh^{a}Ś		jh^{a}Y	jh^{a}R	jh^{a}L
b										b^{a}Ś				
j										j^{a}Ś				
ch											ch^{a}V			
kh												kh^{a}Y	kh^{a}R	
c												c^{a}Y	c^{a}R	
ś													ś^{a}R	ś^{a}L
Ñ							ñ^{a}M							

The order of elements listed in the *Śs* is as follows:

1. vowels (*Śs* 1-4)
    (la) simple (*Śs* 1-2)
    (lb) complex (*Śs* 3-4)
2. consonants (*Śs* 5-14)
    (2a) semivowels (*Śs* 5-6)
    (2b) nasals (*Śs* 7)
    (2c) stops (*Śs* 8-12)

(2c$_1$) voiced aspirates (*Śs* 8-9)
(2c$_2$) voiced non-aspirates (*Śs* 10)
(2c$_3$) voiceless aspirates (*Śs* 11)
(2c$_4$) voiceless non-aspirates (*Śs* 12)
(2d) spirants (*Śs* 13-14)

The above order does not conform with the order of earlier listings, such as those of the *prātiśākhyas*, although there is considerable similarity of terminology and classification. Pāṇini certainly was aware of such previous classifications. However, his *Śs* listing reflects his own special purposes. Patañjali states that the *Śs* are presented in this fashion for the purpose of *vṛtti* 'application of rules' and *samavāya* 'ordered enumeration of elements' (*Mbh.* I:47 *vārttika.* 18).[7] *Vārttika* 19 cites the setting up of *anubandhas* as an added purpose.[8] Actually, the *pratyāhāras* are a means for bringing the elements of the list close to rule applications. A full and insightful discussion of this, as well as the principles of *sāmānya* and *viśeṣa* underlying the listing of the *Śs* in relation to their *anubandhas*, is presented in Cardona (1969).

The denotata of some abbreviatory terms may not, at first glance, be obvious. Consider *aṆ* and *iṆ*. Should the *Ṇ* of these abbreviations be interpreted as the *Ṇ* of *Śs* 1 or of *Śs* 6? For, *aṆ* and *iṆ* formed with *Śs* 1 will denote only *a, i, u* and *i, u* respectively. If the *Ṇ* is interpreted as belonging to *Śs* 6, respectively *a, i, u, ṛ, ḷ, e, o, ai, au, h, y, v, r, l* and *i, u, ṛ, ḷ, e, o, ai, au, h, y, v, r, l* will be denoted. However, an abbreviatory term *iṆ* formed with the *Ṇ* of *Śs* 1 to denote *i, u* counters Pāṇinian practice. Pāṇini never uses *iṆ* to denote *i, u;* instead he uses *iṆ* to denote sounds enumerated by *Śs* 1 through 6. Both interpretations of *aṆ*, however, are valid. The question as to when *aṆ* should be interpreted as formed with the *Ṇ* of *Śs* 1 and when with the *Ṇ* of *Śs* 6 can only be resolved by the explanations (*vyākhyāna*) of the learned. For correct results, *aṆ* in 1.1.51 *ur aṇ raparaḥ,* for example, should be treated as formed with the *Ṇ* of *Śs* 1. As opposed to this, *aṆ* in 1.1.69 *aṇudit savarṇasya...* must be interpreted with the *Ṇ* of *Śs* 6.

Rule 1.1.69 states that a vowel (*aṆ*), as well as an item marked with *U*, denotes itself as well as sounds homogeneous (*savarṇa*) with it. Thus, *a* denotes a class of eighteen vowels distinguished on the basis of length: short (*hrasva*), long (*dīrgha*) or extra long (*pluta*); pitch: high (*udātta*), low (*anudātta*) or circumflex (*svarita*); and nasality: nasalized (*anunāsika*) and non-nasalized (*niranunāsika*). Similar classes of eighteen each is represented by *i, u* and *ṛ*. The *ḷ* vowel represents a class of only twelve vowels as it lacks a corresponding long variety. Vowels denoted by *eC* (*e, o, ai, au*) also represent a class of 12 each. Here, unlike the case of *ḷ*, a corresponding short variety is not available. Items with *U* as their *it* represent a class of five consonants each. Thus, *kU* (*k*) represents *k, kh, g, gh* and *ṅ*. Similar consonant classes are represented by *cU, ṭU, tU* and *pU*.[9]

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[7] *vṛttisamavāyārtha upadeśaḥ.*

[8] *anubandhakaraṇārthaś ca.*

There are many problems which may be raised concerning the formulation of the *Śs* and the use of the resultant abbreviatory terms; problems relating to the order and selection of sound-segments and *its*, the use of *Ṇ* as an *it* twice, the use of *h* as an element twice, as well as the use of a *pratyāhāra* with no less than three denotata. A detailed discussion of these and other problems relating to the *Śs* may be found in Cardona (1969).

(b) The *Dhātupāṭha* (*DP*)

Pāṇini introduces augments (*vikaraṇa*), with their relevant affixes and deletions, with reference to groups of roots. Thus, 2.4.72 *adiprabhṛtibhyaḥ śapaḥ* and, 2.4.75 *juhotyādibhyaḥ śluḥ* delete the augment *ŚaP* and *ŚLU* after roots enumerated in the list headed by *ad* 'to consume' and *hu* 'to offer a ritual sacrifice'. Similarly, 3.1.69 *divādibhyaḥ śyan*, 3.1.73 *svādibhyaḥ śnuḥ*, 3.1.77 *tudādibhyaḥ śaḥ*, 3.1.78 *rudhādibhyaḥ śnam*, 3.1.79 *tanādikṛñbhya uḥ* and 3.1.81 *kryādibhyaḥ śnā* introduce *SyaN*, etc., after verbal roots belonging to the cited groups. Rules 3.1.25 *satyāp... curadibhyo ṇic* and 3.1.27 *kaṇvādibhyo yak* introduce affixes *ṆiC* and *yaK* with reference to specific groups of roots. These rules attest to the existence of the following groups: (1) *adādi*, (2) *juhotyādi*, (3) *divādi*, (4) *svādi*, (5) *tudādi*, (6) *rudhādi*, (7) *tanādi*, (8) *kryādi*, (9) *curādi* and (10) *kaṇvādi*.

The last group, *kaṇvādi*, is treated as consisting mainly of nominal stems. Thus, we have nine classes of verb roots. A tenth class, *bhvādi*, is referred to by rule 1.3.1. *bhūvādayo dhātavaḥ*. The cumulative listing of these ten classes of roots is known as the *Dhātupāṭha* (*DP*). Their traditional order of listing is: (1) *bhvādi* (1035), (2) *adādi* (72), (3) *juhotyādi* (24), (4) *divādi* (140), (5) *svādi* (35), (6) *tudādi* (157), (7) *rudhādi* (25), (8) *tanādi* (10), (9) *kryādi* (67), and (10) *curādi* (441), with the numbers in the right-hand parentheses indicating the amount of roots in each group. In all, the *DP* lists 1970 roots, although it would be a mistake to conclude that 1970 roots exhaust the inventory of roots of the Sanskrit language.

The text and authorship of the *DP* itself is controversial. Was the *DP* received by Pāṇini from the tradition or did he compose it himself? Is the available text of the *DP* the same that Pāṇini either received or composed? Are the meaning entries in the *DP* post-Pāṇinian? Though these and similar questions have been raised and answered in diverse ways, there is agreement upon one point. Given the close correspondence between the root groups listed in the *DP* and those referred to in the grammar, that there existed a *DP* which Pāṇini used is established beyond any doubt.

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[9] Pāṇini provides for proper selection of items from class lists by means of meta-rules 1.1.50 *sthāne' ntaratamaḥ* and 1.3.10 *yathāsaṃkhyam anudeśaḥ samānām*. For a detailed discussion of how 1.3.10 interacts with 1.1.50 in order to select proper substitutes under 1.1.69, see Cardona (1980).

Pāṇini refers to roots in the *Aṣṭādhyāyī* with their *its*. Some of these *its* condition the use of *ātmanepada* terminations, as in 1.3.12 *anudāttaṅita ātmanepadam* and 1.3.72 *svaritañitaḥ kartrabhiprāye kriyāphale*. Other *its* have different functions. Rules 3.3.88 *ḍvitaḥ ktriḥ* and 3.3.89 *ṭvito' thuc* introduce affixes *ktri* and *athuC* when *its Ḍ* and *Ṭ* mark the roots. Such rules show that when Pāṇini composed the *Aṣṭādhyāyī*, he definitely had a listing of roots to which he could refer. Since such reference was made in view of individual groups and subgroups of roots, some form of *DP* necessarily was complementary to the grammar. As to whether Pāṇini used a traditionally available *DP* or composed his own, the answer is more likely to be the latter. For the listing of roots in groups with characteristic marks and operations serves special purposes. One can hardly believe that Pāṇini received the *DP* from the tradition in a form ready to be used in the *Aṣṭādhyāyī* in the manner in which he desired to use it. There are many things in the text which Pāṇini accepted from the tradition, but he uses them with strict adherence to the organization, structure and function of the *Aṣṭādhyāyī* itself. That the form of the *DP* which Pāṇini may have known at the time of his composing the *sūtras* was in strict adherence to the organization, structure and function of the *Aṣṭādhyāyī* is doubtful, if not incredible.

Yudhiṣṭhira Mīmāṃsaka (1973, II:545-8) has discussed in detail the question of whether or not Pāṇini listed the roots in his *DP* with corresponding meaning glosses. There is evidence in the *Mahābhāṣya* to the effect that Kātyāyana regarded the existence of a listing with meaning glosses as non-Pāṇinian (Cardona, 1976:162). Nāgeśa suggests that meaning entries were inserted by Bhīmasena. Palsule (1961:91-95) discusses this matter in detail and also concludes that the meaning entries are non-Pāṇinian. Mīmāṃsaka reaches the opposite conclusion, but his arguments are not convincing (Cardona, 1976:162).

However, some points must be discussed in this connection. First, Patañjali states that Pāṇini recites some roots with infixed *n* (*Mbh.* ad 1.3.7). Nāgeśa concludes from this that some roots were recited with meaning glosses in the earlier versions of the *DP* (Cardona, 1976:163). Leaving aside the question of whether this earlier version was composed by Pāṇini, or was a traditional grouping, we must consider the implications of some roots being listed in different groups with different meanings. For example, *vidĀ* is listed in *divādi, adādi, rudhādi* and *tudādi* in the respective senses of existence (*sattā*), knowledge (*jñāna*), thinking (*vicāra*) and gain (*lābha*). Perhaps certain roots were recited with meanings in order to differentiate them from other roots, for meaning or operational purposes. Pāṇini may have had a special reason for reciting a set of roots with their meaning glosses, perhaps to make a *bhedakattva* 'distinction' of either semantic or operational type. However, the very listing of the same roots in different places may account for *bhedakattva*. In that case, we must conclude that no meaning glosses were put with the listings. To account for their *bhedakattva*, Pāṇini resorted to different organizational and structural devices.

(c) The *Gaṇapāṭha* (*GP*)

The *GP* is an ordered listing of sets of nominal stems. These sets are of two types: some have a definite number of stems, while some are open-ended. The authorship of the *GP*, as the authorship of the *DP*, is in doubt. Jinendrabuddhi[10] is the only commentator who, in consonance with his opposition to Pāṇini's having composed the *DP*, does not accept Pāṇini as the composer of the *GP*. He also states that some parts of the *GP* are post-Kātyāyana. Similarly to his statements on the authorship of the *DP*, however, Jinendra's statements on the *GP* are self-contradictory. Consider *Kāśikā* on rule 1.3.2 *upadeśe'j anunāsika it.*[11] *Kāśikā* states that *upadeśa* here refers to the *Sūtrapāṭha* (*SP*) 'recitation of *sūtras* in the *Aṣṭādhyāyī*' as well as the *Khilapāṭha* 'appendices to the *Aṣṭādhyāyī*'. Jinendra (*Nyāsa* ad *Kāś*., I:393) explains the *Khilapāṭha* as the *DP* and *GP*.[12] Now if one is discussing *upadeśa* and the *SP*, the person who made the *upadeśa* surely is Pāṇini. If, in fact, the composer of the *SP* and the *Khilapāṭha* were different, their inclusion in *upadeśa* would be questionable. Jinendra (*Nyāsa* ad *Kāś*., IV:10) also wonders why Pāṇini did not recite rule 5.1.3 *kambalāc ca saṃjñāyām* in the *gavādi gaṇa.*[13] Now such a question is pertinent only if one believes that the composer of the *SP* and the *GP* are the same. As opposed to this, Jinendra clearly states on *Kāśikā ad* 5.3.2[14] that the *GP* is non-Pāṇinian.

Yudhiṣṭhira Mīmāṃsaka (1973, II:141-46) concludes after a detailed discussion of arguments that Pāṇini, while accepting material from his predecessors, did compose the *GP*. Cardona (1976, II:164-67), too, discusses this problem. He correctly observes that the *GP* was presupposed by the rules of the grammar. I shall reiterate here what I said in connection with my discussion of the *DP*; if Pāṇini's *SP* presupposed the *GP*, then Pāṇini must have had a version of the *GP* before him. Whether he received that version from his predecessors is not the right question. The right question is how much of Pāṇini's version of the *GP* is pre- or post-Pāṇinian. One should remember here that Pāṇini was using the *GP* for a very special purpose, a purpose which had to be in perfect accord with his *SP*. I doubt again that Pāṇini received a version of the *GP* which was tailored for his *SP*. We cannot but accept, with Cardona and Mīmāṃsaka, that Pāṇini composed the *GP*.

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[10] *Nyāsa* ad *Kāś*. (IV:242) on 5.3.2 *kiṃ sarvanāma...sūtrakārasyeha gaṇapāṭha nāsāv upālambham arhati.* Note, however, that this statement may also mean that Jinendra doubts the Pāṇinian recitation of this particular *gaṇa* only; he may not question Pāṇini's authorship of other *gaṇas*.

[11] *upadiśyate' nena ity upadeśaḥ-śāstravākyāni, sūtrapāṭhaḥ khilapāṭhaś ca.*

[12] *khilapāṭhaḥ = dhātupāṭhaḥ; cakārāt prātipadikapāṭhaś ca.*

[13] *atha gavādiṣv eva "kambalāc ca saṃjñāyām" iti kasmān na paṭhati?*

[14] see above fn. 10.

Beside the question of the authorship of the *GP*, there are other questions about the order and listings of individual *gaṇas*. Cardona (1976:166) takes up various points raised in connection with rule 1.1.27 *sarvādīni sarvanāmāni*. He mentions that in addition to the items *sarva* etc., this *gaṇa* also includes three rules, 1.1.34-36, of the *SP*. Kātyāyana[15] objects that 1.1.34-36 are unnecessary in the *SP* as their purpose is served by their listing in the *gaṇa*. Patañjali concludes that these rules are required in the *SP* to provide the optional replacement of *Jas* by *Śī* (*Mbh.* I:297). Why didn't Pāṇini account for the optional replacement by adding one rule to the *SP*? This brings us to the question of carrying *vibhāṣā jasi* from 1.1.32. There is considerable disagreement on this, but I believe that the listing of the *sūtras* in the *GP* is a later addition and that rule 1.1.32 is carried via *anuvṛtti*.

(d) The *Uṇādisūtras* (*Us*)

The *Uṇādi* affixes are used to derive nominal stems. Two versions of the *Us* are found: a *pañcapādī* 'classified in five sections' and a *daśapādī* 'classified in ten sections'. Scholars generally agree that the *daśapādī* is based on the *pañcapādī* and hence is later.

The authorship of these *sūtras*, too, is debatable. However, Pāṇini mentions *uṇādi* in two of his rules: 3.3.1 *uṇādayo bahulam* and 3.4.75 *tābhyām anyatroṇādayaḥ*. The first rule states that affixes *uṆ*, etc., are introduced after verb roots. Thus, *kṛ* + *uṆ* → *kār* + *u* = *kāru* + *sU* → *kāruḥ* 'artisan'. The second rule states that *Uṇadi* affixes can also be introduced to denote *kārakas* other than *sampradāna* 'dative' and *apādāna* 'ablative'. These two rules in the *SP* definitely attest to the fact that the *SP* presupposed the *Us*. There are additional rules in the *SP* which also attest to the existence of the affixes of the *Us*; for example, 3.4.74 *bhīmādayo' pādāne* and 7.3.85 *jāgro' viciṇṇal*. . . . This second rule orders *ar* as a replacement for the *ṛ* of *jāgṛ*. However, this replacement is not allowed before affixes such as *vi*. Pāṇini does not introduce *vi* in the *Aṣṭādhyāyī*. It is an *Uṇādi* affix. The majority of scholars doubt that Pāṇini composed the *Us*. However, if Pāṇini's *SP* presupposed it, he must have had a version of it prior to the time he composed the *SP*. Was that version tailor-made for Pāṇini's *SP* or did Pāṇini revise and rearrange it to suit his purpose? While he may have had a version of the *Us* available to him from the tradition, it is most unlikely that he did not make major changes in it to suit his own purpose.

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[15] *Mbh.* (I:295) ad 1.1.34 *vārttika* 1.

There has been a considerable amount of work done concerning the conflict between the *Us* and the *SP*. This actually makes the presently available text of the *Us* suspect. Scholars generally agree that while Pāṇini did have a version of *Us* which he used for the *SP*, that version which was known to him was later modified.

Bhaṭṭoji lists 751 *Us* in his *SK* (IV:138-306) based on the description of Jñānendra Svāmin's commentary where 325 *Uṇādi* affixes have been discussed. It has been stated that these affixes derive nominal stems from verb roots. It is believed that Yāska and Śākaṭāyana consider that all nouns and substantives derive from verbs and most *Uṇādi* affixes would become useless if this view is not accepted. Also, the derivations involving these affixes lack other derivational details.

(e) The *Phiṭsūtra* (*Phs*)

The *Phs* is a small treatise that deals with the accentuation of linguistic items that are not developed through a derivational process from underlying bases and affixes. Pāṇini presents accent rules with reference to the derivational process. For example, 3.1.3 *ādyuttāttaś ca* states that an item termed *pratyaya* 'affix' carries *udātta* 'high-pitch' on its first vowel. Rule 3.1.4 *anudāttau suppitau* states that an affix denoted by *sUP* or marked with *P* as an *it* carries *anudātta* 'low-pitch'. These affixes are generally introduced after bases termed *dhātu* 'verb root' or *prātipadika* 'nominal stem'. Depending upon the nature of the derivate, its underlying elements and the derivational process, further accent rules are introduced to make adjustments in the accentuation of fully derived forms. However, Pāṇini does not discuss the accent of bases.

The *Phiṭsūtra* also does not discuss the accent of nominal bases whose derivation is not accounted for by a derivational process. This treatise gets its name from its first *sūtra, phiṣaḥ,* which assigns a final high-pitch accent. *Phiṭ,* the nominative singular of *phiṣ*, is used here in the sense of Pāṇini's term *prātipadika*. Cardona (1976:174-77) discusses the editions and texts of this treatise along with the question of its authorship.

The consensus of the tradition is that the *Phiṭsūtra*, in some form or other, was known to Patañjali and Kātyāyana. It was composed by Śantanu who certainly antedates Pāṇini. Whether Patañjali was aware of the *Phs* of Śantanu or of a different treatise dealing with the accentuation of nominal stems is a question without definitive answer. Yudhiṣthira Mīmāṃsaka (1973) and Kapil Deva Shastri (Cardona, 1966:176) claim that the *Phs* predates Pāṇini. This is based on the commentary of Candragomin's grammar on the *pratyāhāra-sūtra aiuṆ*. The commentary claims that earlier grammarians used *aṢ* for Pāṇini's *aC*. The *Phs* also uses *aṢ*, and thus, they claim, must predate Pāṇini. Cardona (1976:177) properly observes that this evidence is not enough to back the conclusion.

(f) The *Liṅgānuśāsana* (*Lā*)

This treatise deals with assigning gender to nominals based on their structure and meaning. The text of this treatise consists of about two hundred aphorisms enumerating items under the headings feminine (*strīliṅga*), masculine (*pulliṅga*), neuter (*napuṃsaka*), feminine-masculine (*strīpuṃsaka*), masculine-neuter (*puṃnapuṃsaka*) and variable (*aviśiṣṭaliṅga*). As the headings imply, certain nominals can only belong to one gender: feminine, masculine or neuter. Others, however, can be used both as feminine and masculine or masculine and neuter. Finally, there is also a set of nominals which can be used in any one of the three genders.

Patañjali states in his *Mahābhāṣya* (I:382) that gender is not taught in the grammar since it is assumed to be known from usage (cf. *Mbh. ad* 2.1.36 *liṅgam aśiṣyaṃ lokāśrayatvāl liṅgasya*). However, there are instances which suggest that Pāṇini did indeed discuss gender. For example, he makes gender the meaning condition for the introduction of certain affixes in 3.3.94 *striyāṃ ktin*, 3.3.18 *puṃsi saṃjñāyāṃ ghaḥ prāyeṇa* and 3.3.114 *napuṃsake bhāve ktaḥ*. Such rules, however, are only indirect evidence. For direct evidence one must consider such rules as 2.4.26 *paraval liṅgaṃ dvandvatatpuruṣayoḥ*.

It has been stated that the *Lā*[16] enumerates items and assigns their gender in view of their structure and meaning. For example, *mātṛ* 'mother', *duhitṛ* 'daughter', *svasṛ* 'sister', *potṛ* 'granddaughter' and *nanandṛ* 'husband's sister'—these five bases which end in *ṛ* are feminine (cf. *Lā* 3:*mātṛduhitṛ...*). A following rule states that items derived by introducing affixes *ani* and *ū* after roots are also feminine. Thus we get *saraṇi* 'street', *dharaṇi* 'earth', etc. (cf. *Lā* 4: *anyūpratyayāto dhātuḥ*). Similarly there are rules which assign gender with reference to meanings. For example, *dundubhi* 'a large kettle-drum' when used in the sense of *akṣa* 'dice' is treated as feminine. So is *nābhi* 'navel' when it does not refer to a *kṣatriya* 'warrior'. However, elsewhere *dundubhi* and *nābhi* are both treated as masculine (cf. *La* 14-16: *dundubhir akṣeṣu — ubhāv anyatra puṃsi*).

Most scholars rightly believe that the text of the *Lā* was not composed by Pāṇini. There are two types of evidence for this. One relates to the inclusion of gender among things which the grammar treats as *aśiṣya*; the other involves conflicts found between the grammar and the *Lā* with respect to the assignment of gender. However, there are some, Mīmāṃsaka for example, who believe that Pāṇini did compose the *Liṅgānuśāsana*. For details, see Mīmāṃsaka (1973:II:256ff) and Cardona (1976:177-79).

The brief account of the related texts of the *Aṣṭādhyāyī* given in this chapter largely follows the accounts offered by Cardona (1976) and Mīmāṃsaka (1973, II). Interested readers may refer to these works for further details.

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[16] See Cārudeva Śāstrī (1973, 5:503-87) for references to *Lā*.

3

Grammar and Rule

Considerable discussion has already occurred in modern linguistics about the exact characterization of the notion of grammar and rule. Scholars of Pāṇini have recently shown a great deal of interest in these issues especially as they relate to the *Aṣṭādhyāyī*. Pāṇini himself does not formulate any direct statements concerning these issues. However, starting with the *Mahābhāṣya* of Patañjali, we find an unbroken tradition of commentaries on the *Aṣṭādhyāyī* and related texts, a tradition rich in contents and details that pertain not only to the *Aṣṭādhyāyī* but, in many respects, to linguistic theory in general. I shall try to present some of the basic themes underlying the notions of grammar and rule as they have been discussed in the Pāṇinian parlance. An attempt will then be made to see how the *Aṣṭādhyāyī* functions as a grammatical device. This will necessarily include a discussion of certain similarities which one may be tempted to establish between the *Aṣṭādhyāyī* as a grammatical device and the current models of grammatical description.

The *Mahābhāṣya* begins with the statement: *atha śabdānuśāsanam* "here begins the instruction about words". This aphorism, perhaps more than anything else, is responsible for grammar being called *śabdānuśāsana*. In answer to the question 'what kind of words?', Patañjali replies: "both Vedic as well as classical Sanskrit." Thus grammar is viewed as a discipline which instructs about words of classical and Vedic Sanskrit. How, however, one should approach the instruction about, or understanding of words. Should one start by taking individual words and explain them till the totality of words in the language is exhausted? Patañjali does not approve of this technique of *pratipadapāṭha* 'recitation of each and every word', mostly because it would require several lifetimes with the end still not in sight. It is said that Bṛhaspati, the ideal teacher, taught Indra, the ideal student, for a thousand heavenly years employing this means of reciting individual words, yet they could not see the end. What then of us human beings — if one lives long it is at most a hundred years.[1]

Patañjali tackles afresh the question of finding a suitable means for

[1] *Mbh.* I, 1-5: *atha śabdānuśāsanam...keṣāṃ śabdānām. laukikānāṃ vaidikānāṃ ca...kim śabdānāṃ pratipattau pratipadapāṭhaḥ karttavyaḥ...anabhyupāya eṣa śabdānāṃ pratipattau pratipadapāṭhaḥ. evaṃ hi śrūyate, bṛhaspatir indrāya divyaṃ varṣasahasraṃ pratipadoktānāṃ śabdānāṃ śabdapārāyaṇaṃ provāca nāntaṃ jagāma...kim punar adyatve. yaḥ sarvathā ciraṃ jīvati varṣaśataṃ jīvati.*

understanding words. He proposes that a set of rules (*lakṣaṇa*) should be formulated based upon the principle of general (*sāmānya*) and particular (*viśeṣa*). He argues that this will enable us to understand the enormous mass of words with little effort. The *Mahābhāṣya* discussion now focuses on characterizing the general and particular aspects of rule formulation. The idea is to make generalizations about words such that a general rule is formulated with reference to related exceptions. What should be the basis for making these generalizations — *loka* 'usage'. In other words, the grammar should treat usage as the standard or norm from which generalizations are abstracted.[2] The question then is raised about which people's usage should be considered. Patañjali identifies them as *śiṣṭa* 'wise, learned' and characterizes them as those venerable *brāhmaṇas* who live in this home of the *Āryas*, whose grain is only one earthen pitcher, who are not greedy, who have not seized upon a cause but who, for some reason or other, have gone to the end of some field of knowledge or other.[3] This description of a *śiṣṭa* is based largely on *nivāsa* 'residence' in *Āryāvartta* and *ācāra* 'conduct' notions, many would consider non-linguistic.

One can safely assume in view of the preceding discussion that the *Aṣṭādhyāyī* is a set of rules formulated from generalizations which accept usage as norm. The purpose of these rules is to give instruction about words. This last needs some explanation. The *Aṣṭādhyāyī* formulates rules to account for correct Sanskrit usage. This usage may be characterized as a set of sentences. However, since the *Aṣṭādhyāyī*, based upon the testimony of Patañjali, accounts for words, how could it be treated as accounting for Sanskrit usage characterized as a set of sentences? The reason grammar may be called a set of rules which account for sentences is primarily strategic. Nāgeśa claims that it is impossible to explain the extent of individual relata and meanings reflected in separated sentences by any briefer means. Hence a different strategy has to be employed. The strategy is to make a theoretical assumption and split up the constituency of a sentence.[4] The reference obviously is to words. Furthermore, these words should be subjected to additional analysis in terms of their components, namely bases (*prakṛti*) and affixes (*pratyaya*).

[2] Ibid.:6: *kathaṃ tarhīme śabdāḥ pratipattavyāḥ kiṃcit sāmānyaviśeṣaval lakṣaṇaṃ pravarttyaṃ yenālpena yatnena mahato mahataḥ śabdaughān pratipadyeran. sāmānyenotsargaḥ karttavyaḥ tasya viśeṣeṇāpavādaḥ.*

[3] Ibid.: *estasminn āryadeśe ye brāhmaṇāḥ kumbhīdhānyāḥ alolupā agṛhyamānakāraṇāḥ kiṃcid antareṇa kasyāścid vidyāyāḥ pārāgās tatrabhavantaḥ śiṣṭāḥ.*

[4] *Paramalaghumañjūṣā*, 4: *tatra prativākyaṃ saṃketagrahaṇāsambhavāt tad anvākhyānasya laghūpāyena aśakyatvāc ca kalpanayā padāni pravibhajya pade prakṛtipratyayavibhāgakalpanena kalpitābhyām anvayavyatirekābhyāṃ tat tadarthavībhāgaṃ śāstramātraviṣayaṃ parikalpayanti smācāryāḥ.*

This analysis, based upon the abstraction of sentences constituted by bases and affixes, is guided by the principle of *anvaya* 'concurrent presence' and *vyatireka* 'concurrent absence'. Nāgeśa is quick to remind us that such divisions are strictly *kalpanā* 'theoretical assumptions' and that *śāstra* 'grammar' is their only domain. This is enough to indicate that the grammar accounts for sentences of the language although it employs the description of words as a tool. Details of this observation will be taken up later. I shall now summarize the basic ideas of traditional grammarians concerning the notion of grammar.

(*a*) Grammar is a set of rules formulated based upon generalizations abstracted from usage.

(*b*) The function of grammar is to account for the utterances of a language in such a way that fewer rules are employed to characterize the infinite number of utterances.

(*c*) The *Aṣṭādhyāyī* accepts the language of the *śiṣṭa*'s as the norm for usage.

(*d*) The *Aṣṭādhyāyī* accounts for the utterances of the language by first abstracting sentences and then by conceptualizing the components of these sentences as consisting of bases and affixes. Needless to say, the network of bases and affixes, and the subsequent operations which derive the components of sentences, are the product of the grammarian's own imagination.

Pāṇinian *sūtras* differ substantially from what we are familiar with as rules in modern linguistics. Usually a 'rule' is self-contained, but a *sūtra* is not. A *sūtra* is supposed to be inambiguous, comprehensive and objective, also brief and precise. To many this sounds paradoxical. Actually, Pāṇini formulated his rules with utmost brevity and algebraic condensation. This brevity, however, was not to be achieved at the expense of clarity. Thus, Pāṇini needed a mechanism whereby *sūtras* could be clearly understood. He chose the technique of context-sharing (*ekavākyatā*). Patañjali is correct when he says that two rules do not become different simply because they happen to be placed in different places in the grammar; they may share a single context.[5] This suggests an interdependency lacking in rules in modern linguistics where they tend to be self-contained, with independent interpretation and application.

This interdependency among rules is of two types: intradomain and interdomain. The second operates within a given domain whereas the first may operate across the domain boundaries. The interdomain dependency is attested to by the metalinguistic device of *anuvṛtti* 'recurrence'. The express function of *anuvṛtti* is to relate preceding rules of a domain to its following rules. That is, *anuvṛtti* allows a controlled reading of a former rule, or part of a former rule, in the interpretation or application of a subsequent rule. It thus helps reconstruct the shared context of a given rule within a domain.

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[5] (*Mbh.* III:392) *na videśastham iti kṛtvato nānāvākyaṃ bhavati. videśastham api sad ekaṃ vākyaṃ bhavati.*

Let us consider an example. Rule 3.1.62 *acaḥ karmakarttari* is composed of two *padas* where the first (*acaḥ*) ends in *pañcamī* 'fifth triplet' and the second (*karmakarttari*) in *saptamī* 'seventh triplet'. This *sūtra* cannot make any sense unless *sūtras* 3.1.1 *pratyayaḥ*, 3.1.2 *paraś ca*, 3.1.22 *dhātor ekāco...*, 3.1.43 *cli luṅi*, 3.1.44 *cleḥ sic*, 3.1.60 *ciṇ te...* and 3.1.61 *dīpajana...anyatarasyām* contribute their elements towards its proper interpretation. A concatenation of all the elements brought via *anuvṛtti* to 3.1.62 produces the following string where I also indicate the nominal endings attached to the individual *padas*.

> *Pratyayaḥ* 1/1 *paraś ca* 1/1 *dhātoḥ* 5/1 *luṅi* 7/1 *ciṇ* 1/1 *te* 7/1 *anyatarasyām* 7/1 *acaḥ* 5/1 *karmakarttari* 7/1

I now present the *vṛtti* of this *sūtra*.

> *ajantād dhātoḥ parasya cleḥ pratyayasya karmakarttari taśabde parataś ciṇādeśo bhavaty anyatarasyām*
> "Affix *CLI* optionally is replaced by *CIṆ* when the former occurs after a verb root ending in *aC* (a vowel) and when *ta*, a replacement of *LUṄ* which denotes *karmakartṛ* 'object treated as if agent' follows".

It is obvious that 3.1.62 cannot be properly interpreted without the help of the previous seven rules contributing elements via *anuvṛtti*. There are yet additional rules which must also be brought close to 3.1.62 for its proper interpretation. *Sūtra* 3.1.62 orders a replacement in the form of X → Y/Z where X is replaced by Y when Z follows. Thus Z forms the right context of this replacement. However, since not every X should be replaced by Y, X must be qualified; it will be termed the left context of replacement. In the example on hand, *ta*, a replacement of *LUṄ* denoting *karmakartṛ*, forms the right context while a verb root ending in a vowel (*aC*) forms the left context. How do we know this? The answer is: from rules of interpretation such as 1.1.67 *tasmād ity uttarasya*, 1.1.66 *tasminn iti nirdiṣṭe pūrvasya* and 1.1.49 *ṣaṣṭhī sthāneyogā*, etc. These rules, however, do not come via *anuvṛtti*; they must be brought by means of some other device. I shall discuss this with reference to intradomain dependency among rules.

The device for reconstructing the shared context of related rules to which Patañjali alludes in his statement on *ekavākyatā* is to be implicitly assumed. I have termed this *reference to antecedent*. Patañjali claims that rules placed in two different places in the grammar may share the same context of application. For example, Pāṇini presents most of his definitional and interpretational rules in the first book. If a given definitional or interpretational rule is required for the interpretation and application of an operational rule elsewhere in the grammar, the grammar must have some way of bringing them together. My idea of a *reference to antecedent* as an implicit device derives from Pāṇini's own practice of relating definitional terms to operational rules in a way that not only facilitates interpretation of these rules but also serves as a guide for determining further steps in derivation. The following convention summarizes the function of this implicit device.

Any term encountered in a rule while scanning a domain for possible rule application triggers the process of reconstructing a referential index (*RI*) for that term. A given *RI* refers to the antecedent of that term by computing all its previous occurrences in the grammar and consequently bringing information close to the rule which triggers the *RI* computation.

The device of reference to antecedent thus brings rules from across the domain boundaries by means of the *RI* computation (see chapter 4 for details of *RI* operation).

Given the fact that a *sūtra* is very brief and concise, and that it depends on other *sūtras* for its proper interpretation and application, a *sūtra* should be interpreted as a sentence. Obviously, it necessitates retrieving required information from elsewhere. Thus, a *sūtra* when fully supplied with all the information required for its application, becomes a statement. A rule is not necessarily a statement as it is not written in the *sūtra* style *per se* and also because it entails practically no information retrieval. This may be reason enough to distinguish between a *sūtra* and rule. However, I prefer to use them both in the sense of a rule for ease of reference.

Contemporary linguists generally formulate rules with a single operation. Pāṇini has formulated many rules with two operations to be performed concurrently. Consider the following rules.

3.1.11 *karttuḥ kyaṅ salopaś ca*
"The affix *KyaṄ* occurs optionally to denote *ācāra* 'conduct' after a *pada* ending in a *SUP* and denoting an *upamāna* 'standard of comparison' as agent; in addition, final *s* of a nominal stem is replaced by zero (*LOPA*).

3.1.12 *bhṛśādibhyo bhuvy acver lopaś ca halaḥ*
"The affix *KyaṄ* occurs optionally to denote the sense of *bhū* 'to be, become' after nominal stems enumerated in the list headed by *bhṛśa* 'more, bountiful' providing these stems did not end in the affix *Cvi;* in addition, the stem final consonant (*hL*) is replaced by zero"

3.1.80 *dhinvikṛṇvyor a ca*
"The affix *u* occurs after verbal roots *dhinvī* 'to please, be pleased' and *kṛṇvī* 'to hurt, injure' when a *sārvadhātuka* affix denoting *kartṛ* follows; in addition, the root-final sound is replaced by *a*"

3.1.108 *hanas ta ca*
"The affix *KyaP* occurs to denote *bhāva* 'action' after the verbal root *han*

'to kill' used without a preverb and co-occurring with a *pada* ending in a *sUP*; in addition, the root-final *n* is replaced with *t*"

3.1.39 *bhīhrībhṛhuvaṃ śluvac ca*
"affix *ām* occurs optionally after verbal roots *ÑIbhī* 'to fear,' *hrī* to be bashful, ashamed,' *ḌUbhṛÑ* 'to hold, provide for' and *hu* 'to offer ritual oblation' providing *LIṬ* follows and the usage is not Vedic; in addition, these roots undergo operations similar to ones which occur when *ŚLU* follows."

The first four rules require specific deletion or replacement operations in addition to the introduction of an affix. The last rule does not specify a single operation. Instead, it directs operation(s) similar to those conditioned by another item. These operations specifically are doubling (*dvitva*; 6.1.10 *ślau*) and *i*-replacement (*itva*; 7.4.76 *bhṛñām it*). The first four operations can be performed simultaneously whereas those required by 3.1.39 cannot. Cardona (unpublished (*a*): 12-14) interestingly distinguishes within the group of rules which order two operations simultaneously. With supporting evidence from Jinendrabuddhi's *Nyāsa* ad *Kāśikā* 3.1.11, he states that rules such as 3.1.11 and 3.1.12 form a type where the two operations do not presuppose each other. Thus, the deletion of *s* ordered by 3.1.11 presupposes the introduction of affix *KyaṄ* but not vice versa. Contrary to this, operations ordered by rules such as 3.1.80 and 3.1.108 both presuppose each other. Cardona also points out that the first type entails two operations where one is major and the other is subsidiary, and it is the subsidiary operation (deletion of *s* in 3.1.11) that always presupposes the major one. The second type where the two operations both presuppose each other entails operations of equal status.

Commentators also make a distinction between elements stated by these rule types. For example, the elements introduced by two operations enjoying equal status are characterized as *saṃniyogaśiṣṭa* 'ordered in conjunction'. Elements introduced by two operations where one is principal and the other secondary are characterized as *pradhānaśiṣṭa* 'ordered as principal' and *anvācayaśiṣṭa* 'ordered as secondary' respectively. These distinctions entail certain consequences. For example, if an element characterized as *saṃniyogaśiṣṭa* is removed, the other element concurrently introduced must also be removed. Rule 4.1.49 *indravaruṇa* ... introduces the feminine affix *NīP* simultaneously with the augment *ānUK*. Thus we get: *indra* + *ānUK* + *ṄiP* = *indra* + *ān* + *ī* = *indrāṇī* 'Indra's wife'. However, in deriving the compound *pañcendra* '*a mantra* whose deities are five Indrāṇīs' from *pañcan* + *Jas* + (*aN* →ϕ) = *pañcendrāṇī*, we find that the feminine affix *NīP* must be deleted by 1.2.49 *luk taddhita luki*. Since *ṄiP* was introduced simultaneously with *ānUK* as *saṃniyogaśiṣṭa*, *ānUK* must also be deleted. The result is: *pañcendr* (*āṇ* → ϕ) (*ī* → ϕ) = *pañcendra*. Note here that the deletion of *ānUK* and *ṄīP* will not yield the string **pañcendr*; instead it will restore the final *a* of *indra* as this *a* was there when *ānUK* and *ṄīP* were introduced.

Pāṇini arranges his rules in domains sequentially. However, when it comes to application of rules, he also resorts to non-sequential ordering. The express purpose of sequential ordering is to help strings locate domains of possible rule application. Elsewhere the ordering may or may not be sequential. Rules in modern linguistics are arranged and applied sequentially, though with certain intrinsic or extrinsic constraints. The notion of cyclic application of rules is also different in Pāṇini. Cyclic rules in contemporary linguistics are formulated based largely upon input conditions. Pāṇini's rule cycles, however, are constrained primarily by output conditions. One must of course remember that the notion of cyclic rules is still not fully developed.

The notion of ordering and cyclic application is closely related to rule interaction. Commentators have identified several categories of rules where operational rules are largest in number. The degree and type of rule interaction depends mostly on the derivates. Consider the following rules.

1.4.1 *ā kaḍārād ekā saṃjñā*
1.4.2 *vipratiṣedhe paraṃ kāryam*
1.4.24 *dhruvam apāye' pādānam*
1.4.42 *sādhakatamaṃ karaṇam*

Rule 1.4.1 requires that only one term should be assigned to a single nominatum (*saṃjñin*). The next rule states that, in matters of conflict, a rule which is subsequent (*para*) in order wins. Now consider the following sentence.

(1) *rāmo dhanuṣā mṛgaṃ vidhyati*
'Rāma is piercing the deer with the bow'

The word *dhanuṣ* 'bow' can qualify for the assignment of both *apādāna* 'ablative' and *karaṇa* 'instrument'. Given an action denoted by *vyadh* 'to pierce', *dhanuṣ* can serve as the fixed (*dhruva*) point from whence movement away (*apāya*) of arrows (*śara*) occurs. It can also be viewed as the most effective means (*sādhakatama*) since arrows cannot be shot without it. There is clearly a conflict between rules 1.4.24 and 1.4.42. Rule 1.4.2 is invoked to resolve this conflict on the basis of *paratva* and consequently *dhanuṣ* is assigned the term *karaṇa* by 1.4.42. The order of rule placement thus becomes a factor in determining the relative strength of rules.

It must be remembered here that the conflicts which 1.4.2 resolves are identified as *tulyabalatā* 'equal strength'. Such strength obtains between rules which are *sāvakāśa* 'with scope of application elsewhere'. Conflicts where one of the rules happens to be *niravakāśa* 'without any scope of application elsewhere' are not covered by 1.4.2. Commentators also observe that conflicts between *nitya* 'obligatory' and *para*, *antaraṅga* 'internally conditioned' and *para* or *nitya*, and *apavāda* 'exception' and *para*, *nitya* or *antaraṅga* rules are not covered by *tulyabalatā*. Hence, such conflicts cannot be resolved by 1.4.2. Pāṇinīyas recognize a *paribhāṣā* in this regard:

pūrvaparanityāntaraṅgāpavādānām uttarottara balīyaḥ.

This is clearly an effort towards setting hierarchical relations among rules (see chapter 5 for details on these rule types).

It has already been stated that the *Aṣṭādhyāyī* is a finite set of ordered rules which is capable of characterizing an infinite number of correct Sanskrit sentences. It is important to realize here that the *Aṣṭādhyāyī* is designed to characterize only correct Sanskrit sentences. A question may be raised here whether sentence analysis should be based on correct or incorrect usage or both. Patañjali observes that only one type of usage, either correct or incorrect, should form the basis for analysis. After all, since the two sets are mutually exclusive, by analysing only one, namely correct usage, the second set, incorrect usage, will become known as what is excluded. This practice has a parallel in the outside world. If someone specifies what should not be eaten, what should be eaten becomes clear. In the same way, if one specifies what should be eaten, what should not be eaten also becomes known. Thus, by specifying that only five of the five-nailed should be eaten, the others which should not be eaten, become known. Similarly, if one says that a village pig should not be eaten, one understands that one found in the jungle can be eaten (*Mbh.* I:23). In the same way, by analysing correct usage one automatically knows incorrect.

Answering the question which usage, correct or incorrect, should form the basis of analysis, Patañjali says that analysis based on correct words is preferred as it is economical. That is, fewer rules are needed to explain correct usage than incorrect usage. After all, a single correct word may have many corresponding incorrect words. Besides, use of correct words brings merit.[6]

The correct words which Patañjali recommends as forming the basis of analysis are further qualified. They must be taken from usage. An interesting discussion follows this. It centres around the question whether there are words which are not found in usage, and if so whether such words should be included in the analysis. Patañjali accepts that there are words which may not be found in usage but that should be included. This appears to directly counter the idea of analysis based on usage. After all, since words exist to convey meanings, if they are not used and hence do

[6] *Mbh. pas.:kiṃ punar atra jyāyaḥ. laghutvāc chabdopadeśaḥ. garīyān apaśabdopadeśaḥ. ekaikasya bahavo' pabhraṃśāḥ...*

not convey meanings, the question of their existence or analysis is vacuous. Patañjali explains that the scope of usage must be taken as widely as possible. Efforts should be made to ascertain whether a particular word exists in usage. Doubt expressed about the existence of a word simply because it has not conveyed meaning is not sufficient since many other words can be used to convey the same meaning and the meaning is thus expressed. Many words had an antique usage such as in the ritual of *dīrghasatra* but are no longer used. Similarly, there are words which are used in other places. The scope of usage is indeed very wide; great effort must be expended in ascertaining whether words exist in usage. In short, even though a particular person may not use a particular word, or a word may not be current in a particular area at a particular time, it does not mean that the word did or does not exist in usage (*Mbh.* I:37-38).

Pāṇini believed in the authority of words (usage). The rules of the grammar are formulated to capture generalizations reflected in usage, and obviously generalizations necessary for the formulation of general rules and their particular exceptions are impossible to abstract from incorrect usage. Consequently, incorrect sentences cannot be treated as norm. This amounts to saying that the grammar is not capable of characterizing the infinity of incorrect utterances.

It is not out of place to indicate here that the Sanskrit grammarians were aware of issues concerning grammaticality and acceptability. Judgments relating to grammaticality and acceptability are not to be treated as depending on the native speaker's intuition. Sanskrit grammarians pay much attention to the usage and the *vivakṣā* 'intent' of the speakers. Thus, it is not surprising to find grammatically correct though semantically deviant sentences similar to Chomsky's "colorless green ideas sleep furiously"[7] discussed by Sanskrit grammarians.[8]

> *eṣa bandhyāsuto yāti khapuṣpakṛtaśekharaḥ*
> *kūrmakṣīracaye snāta śaśasṛṅgadhanurdharaḥ*
> "There goes the son of a barren woman with his hair-top bedecked with sky-flower, bathed with the milk of a tortoise carrying a bow made of the horn of a rabbit".

Such usages are grammatically approved though treated as *kalpanā* 'imagination' and hence, regarded as falling outside the scope of normal usage. Since the Sanskrit grammarians do not bother themselves with the intuitive knowledge of the native speakers, they do not consider it necessary to go deeper into grammatical or semantic deviance. They adhere to the usage of the *śiṣṭas* as norm.

It has been stated that the *Aṣṭādhyāyī* characterizes sentences. However, it has also been observed that this characterization is dependent upon the analysis of words by means of bases and affixes. Thus, the Pāṇinian grammatical device treats words as its ultimate derivate. This observation may create the impression that the *Aṣṭādhyāyī* is a morphologically-based descriptive grammar. It will also raise a question about the status of syntax in Pāṇini. Above all, it will bring into question whether Pāṇini can derive sentences. I have claimed, with support from Nāgeśa, that Pāṇini employs word derivation as a tool to derive sentences. Why doesn't Pāṇini derive sentences directly? I think his strategy is quite obvious. The question loses its appeal for him since his attempt to derive a sentence *per se* would necessarily require him to provide all information relative to word derivation. Furthermore, this attempt will also fail miserably in providing anything significantly different from what his word derivation would have already provided. Pāṇini derives words with reference to the conceptual structure (*CS*) of sentences. This procedure consequently enables him to derive sentences, even though he does not consider the sentence to be either the starting point or the terminal point of his derivational device.

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[7] Chomsky (1957:15).

[8] (*PLM*:37).

The Pāṇinian derivative model is built around two basic though interrelated constructs: conceptual structure (*CS*) of sentences and lexicalization. No sentence can be derived unless there is a clearly established *CS* for it. Since action(*kriyā*) forms the central denotatum of Sanskrit sentences, their *CS* must be established with reference to action. Action requires participants (*kārakas*) for bringing it to fulfilment. Pāṇini sets up six categories of *kārakas: apādāna* ablative', *sampradāna* 'dative', *karaṇa* 'instrument', *adhikaraṇa* 'locus', *karman* 'object' and *kartṛ* 'agent'. The theory of action and participants makes it obligatory for each *CS* to underlie an agent and an action. Thus the agent is a priori given by the theory. Other participants may or may not be involved in a given action depending on the nature of that action and the co-occurrence conditions imposed upon the participants. Let us consider the *CS* of sentence (2).

(2) *rāmo vane sītāyai dhanuṣā mṛgaṃ vidhyati*

The *CS* of this sentence is built around the action of piercing in which Rāma, the agent, is engaged at the current time. The act of piercing is denoted by the verb root *vyadh* 'to pierce'. This particular action, of its own nature, may permit the involvement of participants such as *apādāna* 'ablative', *sampradāna* 'dative', *karaṇa* 'instrument, *adhikaraṇa* 'locus' or *karman* 'object'. In essence, this action permits the involvement of participants which other actions may not allow. We can represent the *CS* of sentence (2) as follows:

CS_1: Action$_1$ (*vyadh*): Agent, Dative, Instrument, Locus, Object

The role of ablative in this CS_1 is recognized although one can argue that since *dhanuṣ* 'bow' can serve as the point from which the movement away (*apāya*; 1.4.24 *dhruvam apāye' pādānam*) can take place, *dhanuṣ* should be assigned the term *apādāna*. An argument counter to the preceding can also be forwarded. Since one cannot shoot an arrow to accomplish the act of piercing without using the bow, *dhanuṣ* should be assigned the term *karaṇa* 'instrument'.

There is clearly a conflict here. The same *dhanuṣ* which may qualify for the *apādāna* may also qualify for the term *karaṇa*. Rule 1.4.1 *ā kaḍārād ekā saṃjñā* governs the assignment of terms in the *kāraka* domain. It would not allow the assignment of two terms to a single entity. Rule 1.4.2 *vipratiṣedhe paraṃ kāryam* must be invoked here to resolve the conflict. Accordingly, *dhanuṣ* must be uniquely termed *karaṇa* on grounds that the rule which assigns the term *karaṇa* is subsequent to the one which assigns the term *apādāna*.

It is at this stage that the process of lexicalization occurs. It starts with the plugging in of lexical items which may specify the abstract categories of participants named in the *CS*. It should be carefully noted here that specifying these categories with lexical items does not automatically accomplish the expression of roles they play in the *CS*. This distinction between 'naming' and 'expressing' will become clear momentarily. In the meantime, let me briefly outline the kinds of lexical items which are recognized by Pāṇini. They fall into two categories: *prātipadika* 'nominal stem' and *dhātu* 'verb root'. Pāṇini defines these terms as follows.

1.2.45 *arthavad adhātur apratyayaḥ prātipadikam*
'a non-root, non-affixal unit with meaning is termed *prātipadika*'
1.2.46 *kṛt-taddhita-samāsāś ca*
'a unit which either ends in a *kṛt* (3.1.93 *kṛd atiṅ*) or *taddhita* (4.1.76 *taddhitāḥ*) affix, or is a *samāsa* 'compound' is also termed *prātipadika*'
1.3.1 *bhūvādyo dhātavaḥ*
'units headed by *bhū* 'to be, become' and the like, are termed *dhātu* 'verb root'
3.1.32 *sanādy-antā dhātavaḥ*
'units which end in affixes *saN*, etc, (3.1.5 *gup-tij-kidbhyaḥ...*) are termed *dhātu*'

The above listings give us a total of six types of lexical items grouped under two categories of nominal stem and verb root. Rule 1.2.46 enumerates three types of stems which are to be derived from units underlying simple bases. Roots of the class characterized by 3.1.32 also fall within the derived category. Lexical insertion in a given *CS* may involve any of the above bases as desired.

Returning to CS_1, we find the following representation after the lexical insertion of the bases has been completed.

CS_1: Action$_1$: *vyadh* (*dhātu*: hereafter *D*)
Agent, Dative, Instrument, Locus, Object
rāma (*prātipadika*: hereafter *P*)
sītā (*P*) *dhanuṣ* (*P*) *vana* (*P*) *mṛga* (*P*)

The next step in the process of lexicalization is to express, by means of affixes, the relations named above. It should be noted here that a relation, especially a *kāraka* relation, though potentially (inherently) named by an action, depending on the intention of the speakers may not be expressed by lexicalization. Thus, in the CS_1, the action denoted by *vyadh* names or potentially inheres agent, object, instrument, dative, ablative and locative. A speaker may not wish to particularize or identify entities which may be capable of serving as object, instrument, etc. For example, a speaker may not wish to particularize *dhanuṣ* as *karaṇa*. With the exclusion of *karaṇa*, sentence (2) can become

(3) *rāmo mṛgaṃ vidhyati vane sītāyai*

'Rāma is piercing the deer in the forest for Sītā'.

Similarly, the speaker may even wish to exclude a particular reference to the agent Rāma, thereby reducing the sentence to

(4) *mṛgaṃ vidhyati sītāyai vane*

'... is piercing the deer for Sītā in the forest'.

Sentences (5) and (6) exclude dative and locative.

(5) *mṛgaṃ vidhyati vane*

'... is piercing the deer in the forest'.

(6) *mṛgaṃ vidhyati*

'... is piercing the deer'

These exclusions do not mean that the action denoted by *vyadh* does not name the deleted *kārakas*. Instead, it merely implies that even though the action potentially inheres or names these participants in the action, the speaker may not wish to particularly identify them in a given sentence. This is the basis for maintaining a distinction between the processes of naming and expressing. Expressing also goes beyond particularizing. That is, the identification of *kārakas* by specific bases doesn't mean that the named *kārakas* have also been expressed. For example, consider the following sentence.

(7) *rāmeṇa mṛgo vidhyate sītāyai vane*

'a deer is being pierced by Rāma in the forest for Sītā'.

Sentences (7) and (3) both mean the same thing; the only difference is the way these sentences express their agent or object. Sentence (3) expresses the agent by using the active ending *ti* with the verb. Sentence (7) expresses the same agent by using the third triplet of nominal ending (*tṛtīyā*). Similarly, the object which is expressed by using the second triplet of nominal ending (*dvitīyā*) in (3) is expressed by introducing affix *ya* to the verb in (7). Agents and objects can either be expressed by post-verbal endings or other affixes. Other *kārakas* can be expressed by nominal endings or other affixes. This proves that an action may name a *kāraka*, lexical bases may identify them, but there will still remain the question of how they shall be expressed. It is for this reason that naming and expressing have to be treated on different levels.

Let us now return to the derivation of sentences (2) and (7). I reproduce here the string with lexical insertion already accomplished.

(2) *rāma* (agent: *P*) *vyadh* (*D*) *vana* (locus, *P*)
sītā (dative: *P*) *dhanuṣ* (instrument: *P*) *mṛga* (object: *P*)

Note here that the terms *prātipadika* (*P*), *dhātu* (*D*) and *kartṛ* 'agent', etc., are assigned by the grammar, among other things, to guide the strings to the domain of possible rule application. This relationship between the assignment of a term and scanning of domains for possible rule application will be discussed in the chapters 4 and 6. Suffice it to say here that the root *vyadh* and other items termed *prātipadika* are sent respectively to the domain of 3.1.91 *dhātoḥ* and 4.1.1 *ṅyāp-prātipadikāt* for possible rule application. The result will be:

rāma + *sU*, *vana* + *Ṅi*, *sītā* + *Ṅe*, *dhanuṣ* + *Ṭā*, *mṛga* + *am*, *vyadh* + *LAṬ*

The string *vyadh* + *LAṬ* will yield *vyadh* + *ya* + *ti* where first *LAṬ* will be replaced by *tiP* and subsequently (*ŚyaN* = *ya*) will be introduced. There are three things which must be noted in connection with the replacement of *LAṬ* by *tiP*. First, *LAṬ* is one of the twelve abstract affixes termed *LA* and introduced after transitive verb roots when either *kartṛ* or *karman* 'object' is denoted. It is introduced after intransitive roots to denote *kartṛ* or *bhāva* (3.4.69 *laḥ karmaṇi ca bhāve cākarmakebhyaḥ*). Second, the decision whether a *LA* affix denotes *kartṛ*, *karman*, or *bhāva* is made at the time when 3.4.78 *tiptasjhi...* applies to replace it with a *tiṄ*. Finally, *tiṄ* is a set of eighteen endings from among which only one may be selected to replace a *LA*.

The nominal affixes *sU*, *Ṅi*, *Ṅe* and *am* are introduced by 4.1.2 *svaujas...* in the domain of 4.1.1 *ṅyāp-prātipadikāt*. These affixes denote diverse *kāraka* and non-*kāraka* relations and their selection is constrained by, among other things, rule 2.3.1 *anabhihite*. This rule requires that these affixes should be introduced only when their denotatum is not already expressed by some other means. Consider the selection of *sU* after *rāma*, which is the named agent. Now, *vyadh* is a transitive verb whose *LAṬ* is replaced by *tiP* to denote agent. An attempt to express *kartṛ* by means of a nominal ending will be clearly in violation of 2.3.1 since *tiP* of *vyadh* + *ya* + *ti* would have already expressed it. This selectional constraint clearly establishes an interdependency between the expression of agent, object, and *bhāva* by a verbal inflection, and the expression of *kartṛ* and *karman* by the nominal endings. Thus, *sU* introduced after *rāma*, the nominal which specifies the *kartṛ*, does not express *kartṛ*. Instead, it expresses only the nominal stem notion (2.3.46 *prātipadikārthaliṅgaparimāṇavacanamātre prathamā*). The condition laid down by 2.3.1 must also be met in connection with the introduction of the other nominal endings. Consider the following string which underlies (7).

rāma + *Ṭā*, *vana* + *Ṅi*, *sītā* + *Ṅe*, *dhanuṣ* + *Ṭā*, *mṛga* + *sU*, *vyadh* + (*LAṬ* → *ta*)

The affix *LAṬ* of *vyadh* + *LAṬ* is replaced here with *ta*, which subsequently conditions the introduction of *ya* to yield the string *vyadh* + *ya* + *ta*. This *ya* expresses *karman* which then cannot be expressed by introducing *am* after *mṛga*. However, since the agent is not expressed elsewhere, affix *Ṭā* must be introduced after *rāma* to denote it. Aside from showing the interdependency between the expression of agent and object by verbal or nominal endings, the derivation of (2) and (7) reveals one other point of interest: namely, that the derivation of (2) and (7) starts with the same two steps, i.e., the assignment of *kāraka* terms and lexical insertion of bases. They later develop differently depending on whether the verbal ending expresses agent or object.

Once the string reaches the step where the nominal and verbal endings have been introduced, the derivation becomes largely automatic. Some of the theoretical implications of the derivational details, however, must be discussed. First, let us consider this summary of the derivational scheme.

(*a*) action : agent
(*b*) action$_1$: agent$_1$ plus the other *kārakas* which action$_1$ may name $= CS_1$
(*c*) lexical insertion of bases identifying action$_1$ and the named *kārakas*
(*d*) lexical insertion of bases identifying units of non-*kāraka* relations = expanded CS_1
(*e*) expressing agent, object or *bhāva* by verbal endings
(*g*) expressing non-*kāraka* relations by means of nominal endings, post-nominal affixes, etc.

Steps (*a*) through (*d*) relate to the level of naming, (*e*) through (*g*) to expressing.

The affixes ruled after nominal bases above are conditioned by 2.3.1 *anabhihite* 'when not expressed otherwise'. This simply means that such affixes can only be introduced after nominal bases when the denotatum of these affixes is not already expressed by something else. This explains why *tṛtīyā* 'third triplet of nominal ending' cannot be introduced by 2.3.18

kartṛkaraṇayos tṛtīyā after *rāma* in (2) to express the agent it specifies. However, since there is nothing, including the verbal form, which expresses the object, *dvitīyā* 'second triplet of nominal ending' can be added by 2.3.2 *karmaṇi dvitīyā* after *mṛga* to express the object it specifies. The same argument goes for all the other affixes introduced after other stems. It is my contention that forms such as *mṛgam* can never be derived by the *Aṣṭādhyāyī* unless the conceptual structure (*CS*) of sentences is taken into account and a reference to forms such as *vidhyati* is made. This shows why the derivation of words such as *mṛgam* cannot merely be termed 'word derivation'. What has been stated as the difficulty in deriving *mṛgam* in (2) holds true for deriving *rāmeṇa* in (7). The Pāṇinian derivational device simply cannot be considered a morphological device of either the Bloomfieldian or neo-Bloomfieldian type.

Pāṇini derives and uses some other types of forms which further support this claim. Consider the following:

(8) *ātmanaḥ putram icchati*
'... wishes a son of his own'

(9) *putrīyati*
'id.'

Sentence (9) consists of the single word *putrīyati*. It is derived by introducing *LAṬ* (to be replaced by *ti*) after the verbal root *putrīya*, which in itself is derived by introducing affix *KyaC* (3.1.8 *supa ātmanaḥ kyac*) after the *pada* (*supaḥ*) *putra* + *am*. Now, *am* is ruled after *putra* to express the object. As stated, the introduction of this affix cannot be accomplished unless reference to the *CS* is made. Pāṇini provides for this by outlining conditions imposed upon the introduction of affix *KyaC*. We understand that *am* must be introduced to express the *karman* related to an action denoted by *iṣ* 'to wish'. In addition, the agent of *iṣ* must wish the object for himself and must also be the same as the agent named by the derived root. A *CS* realized in terms of bases and affixes and also meeting the above conditions is:

(10) *ātman* + *Ṅas putra* + *am iṣ* +*LAṬ*

Sentences (8) and (9) both derive from string (10). Since Pāṇini derives (8) and (9) as optional (*vā*) constructions, (9) alternates with (8). Derivationally, *KyaC* is introduced after *putra* + *am*, a *pada* expressing the object, since it meets all the conditions. This should be enough to show that deriving (9) and (10) as an alternant of (8) cannot simply be considered as word derivation.

Kiparsky (1982) presents some interesting ideas concerning the derivation of sentences, nominals and elliptical constructions. He finds that, unlike grammatical models in current linguistic theory, Pāṇini does not accept that the relationship between sentences and their corresponding nominals or elliptical counterparts is derivational. That is, contrary to current theory, Pāṇini does not derive a passive from an active, or a nominal or elliptical construction from a corresponding sentence. Instead, Pāṇini derives such parallel constructions from a common string. When it comes to deriving nominals, the transformational theory posits an expansion at the phrase-structure level for a nominal parallel to that of a corresponding sentence. The *TG* employs the means of the x̄ (x-bar) convention. Pāṇini, again, does not employ any such means. He instead derives the sentence as well as its corresponding nominal from the same string. The Pāṇinian system is thus economical.

Many of Kiparsky's observations concerning this aspect of the Pāṇinian derivational mechanism are acceptable. However, his explanation of the actual mechanism whereby an underlying relation is expressed in lexical items is confusing. Kiparsky presents the mechanism of Pāṇinian derivation under the title of case, control and ellipsis. While there may not be any substantial difficulty in understanding his arguments in case of a general linguistics student, there are problems in following him for a student of Pāṇini. Consider Kiparsky's explanation of the derivation of the following sentence.

devadattaḥ pacaty odanam

'Devadatta is cooking rice'

Kiparsky, similar to Kiparsky and Staal (1968) posits four levels in the Pāṇinian derivational schema.

Level 1: semantics
Level 2: abstract syntax (*kārakas*)
Level 3: surface structure (morphology)
Level 4: phonetics

I do not fully understand the representation of the above sentence at Kiparsky's level 1: semantics. Perhaps it will be a string of lexical items with diacritics or a frame with slots into which lexical items may later be plugged. Thus: *devadatta* (masculine, singular), *odana* (masculine, singular), *pac*. The verb root *pac* will be taken from the lexicon with diacritics indicating its morphological idiosyncrasies. The verb will also have a reference to time. At the abstract syntactic level, the string will involve the *kārakas* and *LAṬ*, yielding: *devadatta* (masculine, singular, agent), *odana* (masculine, singular, goal), *pac* +*LAṬ* (current time).

At the surface structure level, the string will have the nominative and accusative endings after *devadatta* and *odana* respectively. The third person singular ending *ti* will be placed after *pac* to yield *pac* + *ti*. The string may now be processed by appropriate rules at the phonetic level to yield: *devadattaḥ pacaty odanam*. A difficulty arises here in connection with the verbal form *pacati*. Given the string *pac* + *ti*, 3.4.113 *tiṅśit sārvadhātukam* will assign the term *sārvadhātuka* to *ti* which will then require the introduction of *ŚaP* after *pac* to yield: *pac* + *a* + *ti*. However, Kiparsky, in a footnote,[9] alludes to the introduction of *ŚaP* by means of the diacritics attached to the verb root *pac*. It is thus unclear whether the introduction of *ŚaP* occurs at the level of semantics or of morphology. I would understand it to take place at the level of morphology.

The most confusing part of this representation concerns *LAṬ*. Pāṇini introduces *LAṬ* after a verb root and assigns it the term *pratyaya* 'affix'. A replacement of *LAṬ*, in the present case *ti*, is also termed an affix. Further rules identify it as *parasmaipada* or *ātmanepada*, *vibhakti*, and *sārvadhātuka* or *ārdhadhātuka*, etc. If *LAṬ* and its replacements are affixes, and if an affix, such as *ti* in Kiparsky's schema, has a place at the morphological level, *LAṬ* should be placed at that same level. Instead, Kiparsky puts *LAṬ* at the abstract syntactic level. Thus he equates the abstract syntactic level of the *kārakas* with the level of the affixes (*LAṬ*). Although the *kārakas* may be posited at the level of abstract syntax, placing an affix at that level will constitute a serious violation of the Pāṇinian schema. Affixes, surely, belong to the level of morphology. Agreement with Kiparsky's schema would result in a mixing of Pāṇinian levels which could hinder our understanding of how derivation actually occurs.

Pāṇini was clearly intent upon separating lexicalization from conceptual categories of case. Confusion over the question of whether his *kāraka* categories are semantic or syntactic has been due largely to the fact that he defines them in semantic as well as syntactic terms. This means that anyone bent upon defining the *kāraka* categories on purely semantic grounds must have recourse to compromise. The evidence may indicate that these categories are syntactico-semantic, but this in no way proves that Pāṇini mixes levels. If one insists upon the dichotomy of surface and deep structure, there may not be any disagreement about Pāṇini's not subscribing to it; the disagreement will centre around the nature of the Pāṇinian deep structure. It is my belief that Pāṇini did not formulate his model in terms of deep and surface structure at all. After all, Pāṇini's theory does not entail any network of transformations. This means that any deep structure which can be read into his model is conspicuously lacking in depth. In short, since Pāṇini sought to maintain a direct link between the *CS* of sentences and their actual realization in usage, his *kāraka* categories cannot be viewed as constituting a level either similar to the level of general semantics or of deep syntax. For, this level would lack depth and consequently would not only erase intermediate levels but would also reduce the network of transformations.

The preceding arguments make Pāṇini's model unique insofar as comparisons with *TG*, generative-semantics or case-grammar are concerned. A recent study (Roodbergen 1974) observes that "...in its derivational aspect Pāṇini's grammar works much like the machine mentioned by N. Chomsky in *Syntactic Structures*". Actually, the machine which Chomsky talks about in *Syntactic Structures* refers to a class of grammars generally known as *Finite State Grammar* (*FSG*). After listing some languages, Chomsky shows very effectively that natural languages fall outside the generative power of *FSG*. Chomsky rejects *FSG* especially because it is deficient in handling the disjunctive dependency relationship natural to human languages. If Pāṇini functions much like the machine identified as *FSG* and if Sanskrit can be considered a natural language, Pāṇini must suffer from the same deficiencies as any *FSG*. Chomsky mentions *FSG* to demonstrate the inadequacies of a descriptive linguistic theory such as the one presented in Hockett's *A Manual of Phonology*. There is hardly any evidence to suggest that Pāṇini works in the same way that Hockett does.

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[9] Kiparsky (1982:4).

Pāṇini's model is also unique in that it manipulates word derivation as a tool, for reasons of simplicity and economy, to account for the derivation of sentences. For this, he does not have to posit a general semantic structure as has been suggested by Sinha, nor does he have to specify an elaborate semantic or deep structure as has been postulated by Kiparsky and Staal. His aim is not to make generalizations which may reflect the intuition of native speakers. On the contrary, he aims at making generalizations and setting up a device which can correctly derive sentences as they are used by the native speakers. Actual usages are so much more important for him that he cannot contemplate any kind of abstraction which may create a gap between the conceptual structure of sentences and their actual realization in usage (also see Sharma: 1978).

Pāṇini's *Aṣṭādhyāyī*, in brief then, is a finite set of rules capable of deriving an infinite number of correct Sanskrit utterances. Pāṇini manipulates word derivation as a tool to derive sentences. His grammatical device is thus unique and any attempt to see in him things descriptive, transformational-generative, or anything else will definitely be an imposition.

4

Domain, Recurrence and Reference

Pāṇinīyas recognize two principles for interpreting rules in the *Aṣṭādhyāyī*: *yathoddeśa* and *kāryakāla*. The first emphasizes that a *sūtra* should be understood fully at the place where it first appears in the grammar. The second emphasizes that a *sūtra* should be understood fully at the place where it is operative. These principles have been explained with reference to rules which assign names (*saṃjñā*) or offer interpretation (*paribhāṣā*). For example, an adherent of the *yathoddeśa* view will understand the meaning and function of *sūtra* 1.1.1 *vṛddhir ādaic* right at the beginning of the grammar. However, an adherent of the *kāryakāla* view will wait till the time this rule is brought close to the context of an operational rule which orders *vṛddhi*. One view thus focuses on the physical context of a rule while the other focuses on its functional context. The idea of domain and recurrence is related to the physical context of rules. Reference to antecedent is related to functional context.

Pāṇini presents his rules in sets or blocks in such a way that a larger set contains one or more smaller sets; the larger sets I shall term domains. The notion of domain is crucial to the Pāṇinian system of rule placement. It is obvious from the fact that more than three quarters of the entire grammar is covered by the following four domains:

(*i*) Controlling domain (*CD*), first book of the grammar which contains definitional and interpretational rules in general.
(*ii*) Obligatory domain (*OD*), rules, contained in the third through fifth books which must be scanned by every base-input.
(*iii*) *Aṅga* domain (*AD*), rules contained within the last quarter of book six and the entire seventh book.
(*iv*) *Pada* domain (*PD*), rules contained within the first three quarters of book eight.

The *Aṣṭādhyāyī* arranges its rules in eight books of four quarters each relative to topics and operations. The arrangement of rules in domains is no exception. However, the focus here shifts from topic and operation to proper interpretation of rules and the relations among them. This is especially true in view of the very condensed and algebraic style of rule-formulation. Rules within a domain are arranged such that a lower level rule expects the presence of a higher level rule or elements therefrom for its proper interpretation. Such rules or elements are said to recur and the device which makes such reference possible is known as recurrence (*anuvṛtti*). The first rule of a domain is termed its heading rule (*adhikārasūtra*). Since an *adhikāra* is generally defined as one which recurs, every rule that recurs becomes an *adhikāra*. This, however, is the technical interpretation. An *adhikārasūtra* in general is the heading rule of a domain or an interior domain. There may be rules in a given domain which do not belong to an interior domain. Such rules, when joined with the heading rules of their own respective domains, form the functional context (*FC*) of those domains. A string falls within the application of a domain or an interior domain if and only if it meets the requirements laid down by the *FC*. Consider the following controlled listing.

- 3.1.1 *pratyayaḥ*
- 3.1.2 *paraś ca*
- 3.1.3 *ādyudāttaś ca*
- 3.1.4 *anudāttau suppitau*
  - 3.1.91 *dhātoḥ*
  - 3.1.92 *tatropapadaṃ saptamīstham*
  - 3.1.93 *kṛd atiṅ*
  - 3.1.94 *vā' sarūpo' striyām*
    - 3.1.95 *kṛtyāḥ prāṅ ṇvulaḥ*
    - 3.1.132 *cityāgni citye*
    - 3.2.84 *bhūte*
    - 3.2.122 *puri lūṅ cāsme*
    - 3.3.18 *bhāve*
    - 3.3.112 *ākrośe nāñy aṇiḥ*
    - 4.1.1 *ṅyāp-prātipadikāt*
    - 4.1.2 *svaujasmauṭchaṣṭābhyām...*
    - 4.1.3 *striyām*
    - 4.1.76 *taddhitāḥ*
    - 4.1.83 *prāg dīvyato' ṇ*
    - 5.4.1 *prāg vahateṣ ṭhak*

The above listing clearly shows that rules 3.1.2 through 3.1.4 are not included in any one of the interior domains. These rules together with 3.1.1 form the *FC* of this domain of affixes. Two interior domains headed by 3.1.91 *dhātoḥ* and 4.1.1 *ṅyāp-prātipadikāt* have been shown here with some of their interior domains. Note also that rules 3.1.92, 93 and 94 form the *FC* of the interior domain of 3.1.91.

By rule 1.3.11 *svaritenādhikāraḥ*, Pāṇini tells us that an *adhikāra* is one which is marked by the *svarita* 'circumflex' accent. The function of an *adhikāra* is to contribute itself or its parts to the proper interpretation of the rules governed by it. This contribution is made possible by the process of recurrence. In short, an *adhikāra* carries itself or its parts. Since an *adhikāra* generally is defined as one which recurs in subsequent rules, every rule that recurs becomes an *adhikāra*. Based upon whether the *adhikāra* recurs in full or in part (*ekadeśa*), *anuvṛtti* will be total or partial. An *adhikāra* carried in full normally will head a domain or an interior domain, as shown by rules 3.1.1. *pratyayaḥ*, 3.1.91 *dhātoḥ*, 4.1.1 *ṅyāp-prātipadikāt*, 4.1.3 *striyām*, 4.1.76 *taddhitāḥ*, 6.4.1 *aṅgasya*, 6.4.129 *bhasya* and 8.1.16 *padasya*. An *adhikāra* carried in part normally belongs to a non-heading rule. This necessitates maintaining a distinction between a heading rule (*adhikāra*) which is carried in full and a rule which is carried only in part (*ekadeśa*).

Patañjali mentions three types of *adhikāras*: one, like a lamp, though set in one place, illuminates the entire room; another, by means of a *ca*, is carried to subsequent rules; and a third carries to each and every rule governed by it.[1] This three-way distinction implies that certain *adhikāras* literally are carried via *anuvṛtti* or by means of *ca* while others are treated only as though carried. The *adhikāras* which carry to each and every rule via *anuvṛtti* are heading rules, though not *paribhāṣās*. The *adhikāras* which sit in one place but are treated as understood may or may not be heading rules; however, they mostly are *paribhāṣās* as the following rules exemplify.

1.4.1 *ā kaḍārād ekā saṃjñā*
1.4.2 *vipratiṣedhe paraṃ kāryam*
2.1.1 *samarthaḥ padavidhiḥ*
3.1.3 *ādyudāttaś ca*
3.1.4 *anudāttau suppitau*
4.1.82 *samarthānāṃ prathamād vā*
5.4.68 *samāsāntāḥ*
8.2.1 *pūrvatrāsiddham*

Haradatta (*PM ad Kāś* 1.4.23 *kārake*) mentions six types of *adhikāras*: name (*saṃjñā*), qualifier (*viśeṣaṇa*), substituend (*sthānin*), base (*prakṛti*), condition (*nimitta*) and substitute (*ādeśa*). The examples which he cites are: 3.1.1 *pratyayaḥ*, 4.2.92 *śeṣe*, 6.1.84 *ekaḥ pūrvaparayoḥ*, 4.1.1 *ṅyāp-prātipadikāt*, 6.4.46 *ārdhadhātuke* and 8.3.35 (*apadāntasya*) *mūrdhanyaḥ*. Four inflectional endings mark these *adhikāras*: *prathamā*, *pañcamī*, *ṣaṣṭhī* and *saptamī*. *Saṃjñā* and *ādeśa* are marked with nominative (*prathamā*); *viśeṣaṇa* and *nimitta* with locative (*saptamī*); genitive (*ṣaṣṭhī*) generally marks the *sthānin* while *prakṛti* is marked by ablative (*pañcamī*). It should be remembered here that these remarks on *adhikāras* generally apply to heading rules.

Adhikāras function in many ways: they introduce a term (3.1.1 *pratyayaḥ*), specify a domain (1.4.23 *kārake*), offer a locally valid interpretation, or define the context of an operation. For example, rules 1.4.56 *prāg rīśvarān nipātāḥ*, 1.4.83 *karmapravacanīyāḥ*, 2.1.5 *avyayībhāvaḥ*, 2.1.22 *tatpuruṣaḥ*, 3.1.1 *pratyayaḥ*, 3.1.95 *kṛtyāḥ* and 4.1.76 *taddhitāḥ* introduce terms. One other function of these heading rules will be brought out in our discussion of reference. I have already cited several *paribhāṣās* which constitute headings and other locally valid interpretations. The scope of a heading rule which defines the context of an operation can be viewed in different ways. Thus, a heading may define the right or left context of an operation; consider, for example, 3.1.91 *dhātoḥ* 4.1.1 *ṅyāp-prātipadikāt* and 4.1.82 *samarthānām...* which specify bases after which certain affixes can be introduced. Similarly, 6.3.1 *alug uttarapade* and 2.4.35 *ārdhadhātuke* provide clear illustrations of an *adhikāra* rule defining the right context of an operation. Many headings specify the conditions of affix placement, state an operation or simply define the scope of a domain. Rules 2.4.35 *ārdhadhātuke*, 4.2.92 *śeṣe*, 6.1.72 *saṃhitāyām*, 3.2.123 *varttamāne laṭ*, 3.2.84 *bhūte*, 3.3.18 *bhāve* exemplify these functions.

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[1] *Mbh.* I:362: *adhikāro nāma triprakāraḥ. kaścid ekadeśasthaḥ sarvaṃ śāstram abhijvalayati, yathā pradīpaḥ suprajvalitaḥ sarvaṃ veśmābhijvalayati. aparo' dhikāro yathā rajvāyasā vā baddhaṃ kāṣṭham anukṛṣyate tadvad anukṛṣyate cakāreṇa. aparo' dhikāraḥ pratiyogaṃ tasyānirdeśārtha iti yoge yoga upatiṣṭhate.*

It has been stated that an *adhikāra* is recognized by its *svarita* accent. But since the *Aṣṭādhyāyī* has been handed down to us orally it is difficult to ascertain where the *svarita* mark was intended. Equally difficult is the question of determining how far an *adhikāra* carries. Commentators explain that *vyākhyāna* 'explanations of the learned' is the best source for ascertaining where the *svarita* was intended. Additionally, since the beginning of an *adhikāra* may also mark the end of an earlier *adhikāra*, *svarita* can thus be reconstructed by comparing the two *adhikāras* since one heading ceases to recur at the sight of the other. It is only logical to conclude that the recurrence of an *adhikāra* will be suspended when another is introduced. However, one should rely most on the *vyākhyāna* since the extent of an *adhikāra* depends largely on the expectations (*ākāṅkṣā*) of subsequent rules. The context of a subsequent rule governed by an *adhikāra* thus becomes crucial. The extent of a larger domain or interior domain is much easier to recognize. The situations which require recourse to *vyākhyāna* obtain most often with reference to rules contained within a domain or interior domain.

Two signs serve as indicators for determining the extent of larger *adhikāras*.

(1) Change of a book (*adhyāya*) or a quarter (*pāda*)

The change of a book or a quarter normally signals the beginning of a new topic and thus, signals the beginning of a new *adhikāra*. For example, the following rules all are given at the beginning of a book or quarter: 1.2.1 *gāṅ kuṭatibhyo...*, 1.4.1 *ā kaḍārad ekā saṃjñā*, 2.1.1 *samarthaḥ padavidhiḥ*, 2.3.1 *anabhihite*, 2.4.1 *dvigur ekavacanam*, 3.1.1 *pratyayaḥ*, 3.2.1 *karmaṇy aṇ*, 3.3.1 *uṇādayo bahulam*, 3.4.1 *dhātusambandhe pratyayāḥ*, 4.1.1 *ṅyāp-prātipadikāt*, 4.2.1 *tena raktaṃ rāgāt*, 6.1.1 *ekāco dve prathamasya*, 6.3.1 *alug uttarapade*, 6.4.1 *aṅgasya*, 7.1.1 *yuvor anākau*, 7.2.1 *sici vṛddhiḥ parasmaipadeṣu*, 8.1.1 *sarvasya dve*, 8.2.1 *pūrvatrāsiddham*, 8.4.1 *rasābhyāṃ no ṇaḥ samānapade*. The enumeration of these rules attests that the change of a book or quarter does signal a new topic. However, this may not always be easy to comprehend as such cases as 4.3.1 *yuṣmadasmador anyatarasyāṃ khan ca*, 5.4.1 *pādaśatasya*... and 6.2.1 *bahuvrīhau prakṛtyā pūrvapadam* indicate. Careful study of the context of these rules, however, lets us comprehend the change of a book or topic. For instance, rule 5.3.119 *ñyādayas tadrājāḥ* is the last rule of the third quarter of the fifth book. It assigns the term *tadrāja* to certain affixes. This being the domain of affixes, one naturally would see a change in the offing. Similarly, rule 1.4.1 *ā kaḍārād ekā saṃjñā* delimits the domain of *ekasaṃjñā* valid through rule 2.2.38 *kaḍārāḥ karmadhāraye*. One can safely assume that 2.3.1 *anabhihite* would introduce ... a new topic. The problem of determining the beginning of a new book, quarter, or topic, can also be resolved on the basis of the recurrence of rules which head larger domains. Rules 4.1.76 *taddhitāḥ* and 6.4.1 *aṅgasya* are examples of this.

Since the *Aṣṭādhyāyī* has been handed down to us largely through oral tradition, reliance on a written text in determining the change of a book, quarter or topic, and subsequently the beginning of an *adhikāra*, may to some appear questionable. However, the present arrangement of rules in books and quarters follows a system connected to the change in topics, so my observations still remain valid.

(2) Use of *ā* 'up to' and *prāk* 'prior to'

Pāṇini uses *ā* and *prāk* to explicitly indicate the extent of a domain. He uses *ā* to indicate inclusive extent while *prāk* indicates exclusive extent. Consider the following listings where I also indicate rules which have been referenced as constituting the limit.

1.4.1 *ā kaḍārād ekā saṃjñā*
1.4.56 *prāg rīśvarān nipātāḥ*
1.4.97 *adhi rīśvare*
2.1.3 *prāk kaḍārāt samāsaḥ*
2.2.38 *kaḍārāḥ karmadhāraye*
3.2.134 *ā kves tacchīla..*
3.2.177 *bhrājabhāsabhāṣa...*
4.1.83 *prāg dīvyato' ṇ*
...
4.4.1 *prāg vahateṣ ṭhak*
4.4.2 *tena dīvyati*
4.4.75 *prāgg hitād yat*
4.4.76 *tad vahati rathayugaprāsaṅgam*
5.1.1 *prāk krītāc chaḥ*
...
5.1.5 *tasmai hitam*
5.1.17 *parikhāyā ḍhañ*
5.1.18 *prāg vateṣ ṭhañ*
5.1.37 *tena krītam*

...
5.1.115 *tena tulyaṃ kriyā ced vatiḥ*
5.3.1 *prāg diśo vibhaktiḥ*
5.3.27 *dikśabdebhyaḥ...*
5.3.70 *prāg ivāt kaḥ*
5.3.96 *ive pratikṛtau*
8.3.63 *prāk sitād aḍyayāye' pi*
8.3.70 *parinivibhyaḥ sevasita...*

The above listings show only two instances of *ā* as opposed to ten instances of *prāk*. Two instances of *prāk* form an interior domain within a domain marked with *ā*. The interlocking of domains marked with *prāk* gives the impression of overlapping. This is due mainly to the fact that the rule which references the excluding limit of an *adhikāra* is included within another *adhikāra*. That is, a heading marked with *prāk* is included within the range of a similar heading. Can this create any difficulty in interpreting the rules? Normally not, but there are instances where caution is advised. Consider rule 5.1.1 *prāk krītāc chaḥ* which one would normally consider valid prior to rule 5.1.37 *tena krītam*. However, the scope of this interior domain does not extend beyond 5.1.17 *parikhāyā ḍhañ*. This is because the extent of a *prāk* domain entails both formal as well as semantic specifications. That is, an item which specifies the extent of a domain (of *prāk*) may be construed as denoting either its form or its meaning. For example, rules 4.4.75 *prāgg hitād yat* and 5.1.1 *prāk krītāc chaḥ* use *hita* and *krīta* to specify the limit of their domains. As indicated by the above listings, these domains extend up to 5.1.5 *tasmai hitam* and 5.1.37 *tena krītam* respectively. But this is not correct. The two words, *hita* and *krīta*, here indicate the extent of their domains by means of their denotata. That is, the domain of 4.4.75 *prāgg hitād yat* extends up to the rule which introduces an affix denoting the sense of *hita*. The same is applicable to the domain of 5.1.1 *prāk krītāc chaḥ*. As a result, 4.4.75 is valid prior to 4.4.144 *bhāve ca*. Rule 5.1.1 is valid prior to 5.1.18 *prāg vateṣ ṭhañ*.

It is clear from above that the extent of larger domains is easier to determine. This should not give one the impression that determining the extent of larger domains is free of problems. Consider rule 6.4.1. *aṅgasya*. It is generally accepted that 6.4.1 governs rules enumerated through book seven. However, the *Mahābhāṣya* (IV: 661-65) also examines another view which holds that 6.4.1 should not be considered valid beyond rules dealing with *abhyāsavikāra* 'modifications relative to reduplication'.

Consider 7.4.82 *guṇo yaṅlukoḥ* which orders *guṇa* (1.1.2 *adeṅ guṇaḥ*) under the condition of a following *yaṄ*, or its deletion by *LUK*. Thus, we get *guṇa* in *bobhoti* and *bobhavīti*. The use of the word *LUK* in 7.4.82 and the fact that *guṇa* is applicable even when *yaṄ* is deleted by *LUK* are basic points in determining the extent of 6.4.1 prior to rules dealing with *abhyāsavikāra*.

If the word *LUK* is not included in the wording of rule 7.4.82, *guṇa* cannot take place in *bobhoti* and *bobhavīti*. The reason is simple: rule 1.1.63 *na lumatāṅgasya* would not permit it.

Rule 1.1.63 can accomplish this blocking only if 7.4.82 is included within the domain of 6.4.1. Accordingly, rule 6.4.1 must cover rules enumerated through the end of book seven. If 6.4.1 is not treated as valid through rule 7.4.82, 1.1.63 cannot block *guṇa* and 7.4.82 would not need the explicit mention of the word *LUK*. For, in that case, *guṇa* will be accomplished on the basis of 1.1.62 *pratyayalope pratyayalakṣaṇam*. Should we then accept that 6.4.1 does not cover rules dealing with *abhyāsavikāra*? No, that would create other problems. For example, in deriving *vavraśca*, a *LIṬ* derivative of *vraśc* 'to cut', from *vraśc* + *vraśc* + *a*, 7.4.60 *halādi śeṣaḥ* reduces the first *vraśc* to *va*. The result is *vavraśca*. However, 6.1.17 *liṭy abhyāsasyobhayeṣām* may apply prior to reduplication. As a result, *samprasāraṇa* (1.1.45 *ig yaṇaḥ samprasāraṇam*) will take place and a wrong form **uvraśca* will result. Such problems do not arise if the domain of 6.4.1 is considered valid through the end of book seven. I do not wish to burden the reader with other details considering this issue. Suffice it to say that determining the extent of domains requires *vyākhyāna*.

The interpretation (*vyākhyāna*) of commentators is generally regarded as decisive in matters of conflicts concerning *adhikāras*. The smaller *adhikāras* in general and those forming part of a rule in particular are often tricky. Aside from *vyākhyāna*, one can resort to the *anuvṛtti* process itself. *Anuvṛtti* elements are read with subsequent rules as part of their subject (*uddeśya*) or predicate (*vidheya*). A completed sentence with fully expanded *uddeśya* and *vidheya* thus becomes the interpretation of the *sūtra* in question.

Several indicators make it easy to ascertain what is carried. An *anuvṛtti* element can be carried either as part of the subject or predicate of a subsequent rule. Both sentential units have their own structure and content. Any element that carries must be syntactically and semantically compatible with the structure of subsequent rules. Thus, an incompatible *adhikāra* is suspect. Some incompatibilities, though, are hard to avoid. For example, there are many instances in the *Aṣṭādhyāyī* where the inflectional ending of a recurring element does not make any sense in subsequent rules. This does not, however, form the basis for rejecting an element as an *adhikāra*. Instead, the ending is changed to suit the needs of subsequent rules. There are also instances where an *adhikāra* which has long been terminated reappears. The recurrence of such an *adhikāra* has been compared with the leaping of a frog (*maṇḍūkapluti*). Such leaps must be accepted because, in their absence, a subsequent rule may not make any sense. This shows that an *adhikāra* carries without any interruption. Pāṇini makes explicit mention where he anticipates discontinuation of an *adhikāra*. Rule 3.1.94

vā' sarūpo' striyām is an example where *astriyām* denotes exception to the scope of this rule. At other places, the context accepts or rejects an *adhikāra*. For example, *ṅyāp* of 4.1.1 *ṅyāp-prātipadikāt* does not carry in rules contained within the domain of 4.1.3 *striyām*. The recurrence of *ṅyāp* would not make any sense.

Certain *adhikāras* are accepted as recurring based upon relations among rules. For example, in a domain where an *adhikāra* carries from a general (*utsarga*) to a particular (*viśeṣa*) rule, recurrence of an *adhikāra* will be unacceptable because of blocking. Since a particular rule blocks the application of its general counterpart, a particular rule may not accept the *anuvṛtti* of an element from a general rule. In essence, such an *adhikāra* would be incompatible. There are many instances of this in the domain of 3.1.1 *pratyayaḥ* where the recurrence of a general element is terminated by the appearance of its particular counterpart. The observation that one *adhikāra* ceases to recur at the sight of another is clearly tied to compatibility.

It is obvious from the preceding that *anuvṛtti* and *adhikāra* are connected. *Anuvṛtti* can be defined as a process whereby a former rule or its element is brought close to the context of a subsequent rule. It is an unidirectional process in the sense that a lower level rule expects the recurrence of a higher level rule or an element therefrom. It is also domain specific since Pāṇini presents his rules in domains and interior domains. The process of *anuvṛtti* also is explicit, since without it, proper interpretation of rules within a domain cannot be obtained. Given that *anuvṛtti* is localized within a domain and also is unidirectional, its instrumentality towards proper interpretation of rules falls more within the scope of a *yathoddeśa* view.

The device of reference is implicitly assumed as opposed to the explicit strategy of domain and recurrence in Paṇini. In order to properly interpret and apply a given rule, one must refer to other rules. I call this device "reference to antecedent". Pāṇini uses two types of antecedents: definitional and operational. Definitional reference concerns names (*saṃjñā*) and their denotata (*saṃjñin*), including metasymbols; operational reference involves groups of interpretable rules in an operational context. References made by using technical terms with fixed denotations are here called constants. References made by relative pronouns such as *tad* 'that' and *yad* 'what', on the other hand, are variables.

I shall demonstrate that definitional references and their individual indices are essential for derivation. A technical term or its denotation occurring in a subsequent rule of the grammar requires reference to its term origin, the place where the term was first introduced together with rules which first outlined its denotations. Thus, a technical term x, with its x_1 .... x_n occurrence in the grammar forms a chain of reference in such a way that each occurrence depends on x_1 for its interpretation or for the recovery of its enumerated denotation. A preceding occurrence of this *x* depends on its immediately following occurrence for further steps in derivation. The last rule in this chain of reference always is the rule that triggers this device, while the first rule is always from the *CD*. This chain of reference can be termed complex if it includes one or more term origins.

Since the derivational mechanism is activated and controlled by definitions and operates on inputs by referring to elements, the exact nature of referential indices is important to bear in mind. This means keeping track of all the rules that explain and enumerate the terms and denotations or variables and their antecedents. I shall try to explain and illustrate these observations with examples.

In a sentence such as *kumāraḥ paṭhati* 'The boy reads,' we begin with two lexical items: *kumāra* 'boy' and *paṭh* 'to read, recite'. The controlling domain identifies them as *prātipadika* 'nominal stem' and *dhātu* 'verb root' respectively. When used as input to the obligatory domain; *kumāra* accesses to an interior domain headed by 4.1.1 *ṅyāp-prātipadikāt* 'after that which ends in *Ni, āp,* or else, is a *prātipadika*'; *paṭh,* however, accesses to the interior domain headed by 3.1.91 *dhātoḥ* 'after a verb root'. This access is justified because these governing rules contain the definitional terms *prātipadika* and *dhātu* which, in turn, identify the inputs.

At this stage, rule 4.1.2 *svaujasmauṭ...,* in case of *kumāra,* and rules 3.4.77-78 *lasya-tiptasjhi...,* in case of *paṭh,* become applicable.[2] A serious problem is encountered by these strings in the selection of elements enumerated here. Rule 4.1.2 lists twenty-one elements, and 3.4.78 lists eighteen. How and why should we choose one element from among all these? Is there any built-in device that can bring rules related to *sUP* and *tiṄ* placement closer to these rules? What would be the process of such a contextual recovery? No one doubts the existence and necessity of such a recovery. Patañjali has rightly remarked that "one does not reason that, since two rules occupy separate places in the grammar, they constitute separate contexts. There is one context of related rules, though standing in different places".[3] In essence, operational rules cannot apply unless their interpretational or definitional rules are coupled with them. This can only be accomplished by the device of reference which is triggered by encountering a technical term or its denotation in an operational rule. This device reconstructs the term origin which, in turn, yields a referential index and it is this index that retrieves necessary information, explication or constraints relative to rule-application.

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[2] Subsequent discussion of *LA* and *tiṄ* will show that rules 3.4.77-78 cannot apply unless other rules are brought into focus or apply first; this necessarily means that 3.4.69 *laḥ karmaṇi...* applies prior to 3.4.77-78.

[3] *Mbh.* (*v*.IV:392) on 3.4.67: *na videśastham iti kṛtvato nānā vākyaṃ bhavati. videśastham api sad ekavākyaṃ bhavati...* The English translation here is from Cardona (1967:37).

Thus, a referential index of *sUP*, *LA* and *tiṄ* must be reconstructed by computing the occurrences of these symbols in the higher domains. Let us first consider *LA* and *tiṄ*. *LA* occurs in 3.4.77, 3.4.69 and 1.4.99 where we learn that *LA* affixes are placed after transitive verbs when agents or objects are to be named.[4] In case of intransitive verbs they are placed when agent or *bhāva*[5] 'root sense' are to be named. Furthermore, replacements of *LA* are termed *parasmaipada* 'active'. A separate reconstruction of *tiṄ* leads us to rules 1.4.100-102 and 1.4.104. These rules classify *tiṄ* elements in two sets of three triads each. Individual triads in a set represent third (*prathama*), second (*madhyama*) and first (*uttama*) persons respectively. Similarly, individual elements in a triad represent singular (*ekavacana*), dual (*dvivacana*) and plural (*bahuvacana*).

Since *tiṄ* are replacements of *LA*, the designation *parasmaipada* is transferred to them by rule 1.4.99 *laḥ parasmaipadam*. The immediately following rule, 1.4.100, identifies a second set of *tiṄ* triads, i.e., *taṄ*, as *ātmanepada* 'middle'. Thus we get the following indices:

(1) *LA*: *tiṄ* : *parasmaipada*
(2) *LA*: *taṄ*: *ātmanepada*

It is apparent that these referential indices are complex. We must reconstruct the term origin *parasmaipada-ātmanepada* in its entirety. This requires reference to one more important set of rules, 1.3.12 through 1.3.78, where we learn that when *bhāva* 'root sense' or *karman* 'object' are to be expressed by the verb, *ātmanepada* endings should be selected.[6] As opposed to this, the *parasmaipada* set can be selected only when the agent has to be expressed. Thus, our referential indices outlined above have selectional constraints imposed upon them. That these agents, *bhāva*, or object constraints are important will become clear when we explain their direct bearing on derivational choices.

Let us come back to the reconstruction of our term origin *sUP*. This metasymbol also has been explained in the same set of rules, 1.4.100 through 1.4.104, which explained *tiṄ*. These rules classify the *sUP* elements in seven triads where each triad contains a singular, dual, and plural. These triads together form a subset of *vibhakti* 'nominal inflection' along with *tiṄ*. Furthermore, individual triads have been referenced as *prathamā* 'first',

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[4] 'Naming' here refers to the invocation of inherent syntactico-semantic features of verb roots, in contrast to 'expressing' which means that a verbal form may or may not express agent, object, etc., through its post-verbal affixes even though its underlying root has already specified them (see also p. 53).

[5] Pāṇini uses *bhāva* with several meanings; for an insightful discussion of this diversity see Cardona (1970). I shall use the term in the sense of the central meaning of the verb root or action alone.

[6] Rules contained in the set 1.3.12 through 1.3.78 discuss the *ātmanepada-parasmaipada* placement with reference to various features of the verbal forms.

dvitīyā 'second', etc. Thus, terms like *vibhakti* and *prathamā*, etc., require one to bring the *vibhakti* section, i.e., the third quarter of the second book, close to the context of *sUP* selection. Since *vibhaktis* generally have been discussed with reference to *kārakas*, a reference to the *kāraka* section in the controlling domain is unavoidable. We must emphasize here that a selection from among the *sUP* affixes is practically impossible unless reference is made to the *kāraka-vibhakti* section of the grammar which, in turn, will require reference to the dependency relations between *sUP* and *tiṄ* selections.

Returning to our earlier remarks on derivational choices, we want to start with the constraints imposed on *sUP* and *tiṄ* selections. If the verbal root *paṭh* 'to read' opts for a selection in the *parasmaipada* set, the resultant form will express the agent through its *parasmaipada* endings. The result would be: *paṭh* + *ŚaP* + *tiP* → *paṭhati* 'he reads'. This will leave *kumāra*, the named agent, to express only its *prātipadikārtha* 'nominal stem notion' since its function (*kartrartha*) has already been expressed by *ti* in *paṭhati*. On the other hand, if *paṭh* opts for an *ātmanepada* set, *kumāra* will have to express the agent. The resultant string will be passive rather than active: *kumāreṇa paṭhyate* 'x is read by the boy'. Aside from offering interpretive insights and derivational options, referential indices also control derivational history. There are numerous such instances scattered throughout the grammar.

Let us consider some of the terms used in the domain of compound rules. We have *samāsaḥ* (2.1.3), *avyayībhāvaḥ* (2.1.5), *tatpuruṣaḥ* (2.1.22), *bahuvrīhiḥ* (2.2.23), *dvandvaḥ* (2.2.29) and *upasarjanam* (2.2.30). If a string enters this domain and starts scanning rules for possible application, it must also be provided with all the necessary information required for such application. Such information is not readily available here and as a consequence, it has to be retrieved from different sources. Part of the information will come from recurrence, but most of it must be retrieved through referential indices. It is worthwhile to discuss briefly the importance of the following reconstructed indices.

(*a*) *samāsa* 'compound'

1.2.45 *arthavad adhātur apratyayaḥ prātipadikam*

'a non-root non-affix meaningful unit is termed *prātipadika* 'nominal stem'

1.2.46 *kṛt-taddhita-samāsāś ca*

'a unit which ends in a *kṛt* or a *taddhita* affix or is a *samāsa* 'compound' is also termed *prātipadika*'

(*b*) *avyayībhāvaḥ* 'indeclinable compound'

1.1.37 *svarādi-nipātam avyayam*

'items cited as *svar-ādi* '*svar*, etc.' and also those that bear the name *nipāta* 'particle', are termed *avyaya* 'indeclinable'

1.1.41 *avyayībhāvaś ca*
'*avyayībhāva* compounds are also termed *avyaya*'

(*c*) *tatpuruṣa*
1.2.42 *tatpuruṣaḥ samānādhikaraṇaḥ karmadhārayaḥ*
'a *tatpuruṣa* compound whose constituents stand in *samāna-adhikaraṇa* 'syntactic coordination' is termed *karmadhāraya*'

(*d*) *upasarjana* 'secondary element'
1.2.43 *prathamā-nirdiṣṭaṃ samāsa upasarjanam*
'that constituent of a compound which is referenced with *prathamā* 'first of the *sUP* triads' in rules that allow compound formation is termed *upasarjama*'
1.2.44 *ekavibhakti cāpūrva-nipāte*
'constituents which are consistently referenced with *ekavibhakti* 'fixed member of a *sUP* triad' and are not cited in rules dealing with *pūrva-nipāta* 'initial placement' are also termed *upasarjana*'

In accordance with rule 2.1.4 read with the *sUP* of 2.1.2, a compound is the result of integrating two nominal *padas* 'fully inflected words'. The result of this integration, the compound, is termed *prātipadika* 'nominal stem' by rules 1.2.45-46. Thus, the term *samāsa* 'compound' in (*a*) brings the designation *prātipadika* to all compounds. Similarly, if there are two syntactically related words and one of them has been referenced with the first of the *sUP* triads, i.e. *sU, au, Jas,* in a rule that allows compound formation, the said word is an *upasarjana*. Rule 2.2.30 requires that *upasarjana* elements be placed first in a compound. Application of 2.2.30 is practically impossible unless one knows what *upasarjana* means. This information is provided by rules 1.2.43-44 and hence must be retrieved from thereto permit application of 2.2.30. Retrieving this kind of information is precisely the function of referential indices. I have already stated that this process is triggered by encountering a term or its denotations within a rule. What follows is the reconstruction of term origin in tracing back the rules which first cited the term or explained, illustrated or constrained it. A systematic computation of all such rules along with relevant information contained in them characterizes a referential index.

As opposed to the general referential indices cited above, references listed under *(b), (c)* and *(d)* are specific. The relevance of the term *avyaya* to *avyayībhāva* compounds cannot be realized unless rules 1.1.37 and 1.1.41 are brought closer to the context of 2.1.5. In the interior domain headed by 2.1.22, we find one of the subtypes of *tatpuruṣa* referred to as *dvigu*. If a referential index of the term *tatpuruṣa* is not reconstructed as soon as this term is encountered, a second subtype of the *tatpuruṣa* compound, i.e., *karmadhāraya*, can never be realized. It becomes increasingly clear that the domain of compound formation is not limited to rules 2.1.1 through 2.2.38, but must be expanded to include rules brought closer to its context by the process of reference.

As noted earlier, references in terms of variables involve *yad* or *tad* and are used in specific operational contexts. The term 'operational context' means that variables are manipulated with reference to specific operations. Furthermore, these operations are permitted under certain constraints. For example, rules 4.1.82 and 4.1.92 concern an operation which allows sentential strings to alternate with their corresponding affixed units. This operation is constrained by 4.1.82 in the sense that the sentential strings must be composed of two syntactically related words. Further, the affix can only be postposed to the first word and the entire operation is optional. For the purpose of this operational context, the first syntactically related unit can be regarded as the generalized constant to which subsequent variables will refer.

To enable this reference, the variables are manipulated as though they filled a functional slot and are marked by specific case endings. Such references have been extensively used in the *taddhita* and *kṛt* sections of the grammar. Let us consider the following references.

4.1.82 *samarthānāṃ prathamād vā*
'after the first of two syntactically related *padas* optionally'
4.1.92 *tasyāpatyam*
'in the sense of the descendant of *x*...'
4.2.1 *tena raktaṃ rāgāt*
'*x* (the colour) by which *y* has been coloured'
4.2.37 *tasya samūhaḥ*
'in the sense of the group of *x*'

In the translation of the above *sūtras x* stands for the variables. The syntactically related *pada* inferred from 2.1.1 and referred to as *samartha* 'syntactically related' in 4.1.82 is the constant generalized in such a way that all the *x*s in the above rules fill its functional slot. Since a syntactically related element is necessarily a *pada* and hence is destined to end in a case ending, the problem of ascertaining the case ending arises. If we manipulate the variables as though they represented those *padas* or filled the functional slots of the generalized constants, then their case endings become explicit. Thus the variables in 4.1.92, 4.2.1 and 4.2.37, i.e. *tasya* marked with the genitive and *tena* marked with the instrumental, refer to those *padas* that end in the sixth, third and sixth endings respectively.

In these instances, the case endings should be construed in accordance with the statements made in the *kāraka-vibhakti* section of the grammar. The sixth ending should be used (2.3.50) where one wants to express relationships other than those expressed by the accusative, etc., (*dvitīyā*; 2.3.2 *karmaṇi*...). The third should follow 1.4.42 *sādhakatamaṃ karaṇam* whereby we learn that that which is most instrumental in accomplishing an action is the *karaṇa* 'instrument'. In our rule, *tena* stands in the third case ending represented by *karaṇa* and refers to that syntactically related *pada* which is explicitly stated by 4.1.82. However, not just any syntactically related *pada* can and should be brought as referent in place of *tena* because of semantic specifications that follow *tena,* i.e. *raktam* 'coloured' and *rāgāt* '... colour'. This results in construing the sense of the third ending in this context as the colour which is most instrumental in accomplishing the act of colouring. Thus, any word standing for colour should be put in the instrumental.

Our discussion has established the following facts about domain and reference.

(*a*) Pāṇini operates with an elaborate system of *anuvṛtti* whereby higher level rules within a domain are brought close to the context of lower level rules to facilitate the proper interpretation of the latter.

(*b*) Occurrences of technical terms in various rules perform the function of a triggering device which causes recourse to the process of reference. This process entails reconstructing the term origin which, in turn, yields a referential index.

(*c*) Such indices are vital to rule application and interpretation. Their importance is shown by the fact that the grammar cannot be manipulated without constant reference to technical terms and their denotata.

5

The Structure of the *Aṣṭādhyāyī*

Scholars in the past have studied the structure of the *Aṣṭādhyāyī* from diverse orientations. Faddegon's study (1936) largely neglected the function of the *Aṣṭādhāyī.* Pawate (1935) concentrated on finding anomalies which could establish pre- or post-Pāṇinian elements of insertions. Buiskool (1939), rather brilliantly, studied the *Aṣṭādhyāyī*'s organizational structure, but only of one section, namely the *Tripādī* "the last three quarters". More recently, Bhattacharya (1966), Bahulikar (1972) and Cardona (1976) have investigated the structure of the *Aṣṭādhyāyī.* Bhattacharya's interest lay in justifying the order of various sections, or their contents, and in determining what, if any, elements in the text may be treated as pre-Pāṇinian. A similar concern occupied Bahulikar, who claimed that, based upon the analysis of the structure and the arrangement of the *sūtras,* one can discover layers of internal composition and arrangement. Bahulikar discerned a core of the *Aṣṭādhyāyī* which she attributed to Pāṇini, with subsequent layers superimposed by others. Cardona's balanced and trustworthy treatment judiciously examines all the different views, especially those of Bhattacharya and Mīmāṃsaka.

I shall not concern myself here with what can and cannot be treated as un-Pāṇinian in Pāṇini's *sūtras.* Except for a few variations of consequence, the *Aṣṭādhyāyī*'s text is well established. Even many of the non-Pāṇinian insertions are important for the correct interpretation of the text as it stands. After all, given the excellence of the *Aṣṭādhyāyī* as a grammar, it is certainly not a miracle brought about overnight. Pāṇini must have belonged to, and thus benefited from, a very rich grammatical tradition. This is certainly not to say that a study of insertions is not important. However, since most of the insertions are functionally well motivated, an investigation which centres on their origin rather than their function is less consequential. A study of the placement and context of rules can still teach a great deal provided it is pursued with proper orientation.

The discussion here of the structure of the *Aṣṭādhyāyī*, however, will concentrate on its organization and function. Surely, one of the reasons why Pāṇini arranged his rules in this particular order was to place them in domains and interior domains. An equally strong motivation, though, for this particular rule order is metatheoretical in nature. The grammar cannot accomplish its intent without clearly formulating both metatheory and conventions. Thus, the topical arrangement of rules in domains, also reflects the conceptual structure of the grammar. These dual motivations go hand in hand.

It is true that Pāṇini presents his rules in a serial order, but since they are classified in books and chapters according to topics, and also are organized under *adhikāras*, their functions cannot be discussed just on the basis of seriality or contiguity (*paurvāparya*). As I shall try to show, contiguity with reference to topics and *adhikāras* reveals the primary layer of organization where *anuvṛtti* and interpretation of *sūtras* is in focus. Another layer superimposed on this straddles topic and domain boundaries. Furthermore, one can establish yet another layer of organization where rule interaction of broader consequence is in focus. I have discussed in chapter 4 the notion of domain and *anuvṛtti*. The type of organization reflected by them is what I refer to here as the primary layer. Now consider the domain of *ekasaṃjñā* 'one term' where we also find the application of 1.4.2 *vipratiṣedhe paraṃ kāryam*. The organization reflected by rules of the *ekasaṃjñā* domain constitutes what I refer to here as the second layer. The third, and rather sophisticated aspect of organization, is reflected by, for example the division of the *Aṣṭādhyāyī* into *sapādasaptādhyāyī* 'the first seven books and one quarter' and *tripādī* 'the (final) three quarters'. These layers of organization are based upon rule interaction where blocking of one rule by another is anticipated. I shall try to present the structure of the *Aṣṭādhyāyī* by discussing its content and organization as it relates to the notions of contiguity, rule interaction and blocking. This, I hope, will reveal the functional aspect of its structure.

The following is the summary of topics discussed in the *Aṣṭādhyāyī*.

Book: I

(*a*) major definitional and interpretational rules
(*b*) rules dealing with extension (*atideśa*)
(*c*) rules dealing with *ātmanepada-parasmaipada*...
(*d*) rules dealing with the *kārakas*

Book: II

(*a*) rules dealing with compounds
(*b*) rules dealing with nominal inflection
(*c*) rules dealing with number and gender of compounds
(*d*) rules dealing with replacements relative to roots
(*e*) rules dealing with deletion by *LUK*

Book: III

(*a*) rules dealing with the derivation of roots ending in affixes *saN*, etc.
(*b*) rules dealing with the derivation of items ending in a *Kṛt*
(*c*) rules dealing with the derivation of items ending in a *tiṄ*

Book: IV

(*a*) rules dealing with the derivation of a *pada* ending in a *sUP*
(*b*) rules dealing with feminine affixes
(*c*) rules dealing with the derivation of nominal stems eding in an affix termed *taddhita*

Books: VI-VII

(*a*) rules dealing with doubling
(*b*) rules dealing with *samprasāraṇa*
(*c*) rules dealing with *saṃhitā*
(*d*) rules dealing with the augment (*āgama*) *sUṬ*
(*e*) rules dealing with accents
(*f*) rules dealing with phonological operations relative to a presuffixal base (*aṅga*)
(*g*) rules dealing with operations relative to affixes, augments, etc.

Book: VIII

(*a*) rules dealing with doubling (*dvitva*) relative to a *pada*
(*b*) rules dealing with accent relative to a *pada*
(*c*) rules dealing with other phonological operations relative to a *pada*
(*d*) rules dealing with miscellaneous operations relative to a non-*pada*

The first book discusses basic terms, conventions and grammatical constructs. This does not mean that Pāṇini discusses terms and conventions only here, but that later discussion is minimal and with special purpose in mind. For example, he introduces the terms *sārvadhātuka* (3.4.113 *tiṅśit sārvadhātukam*) and *ārddhadhātuka* (3.4.114 *ārddhadhātukaṃ...*) in the domain of 3.1.91 *dhātoḥ* to facilitate, among other things, the introduction of elements such as *ŚaP*, etc. (3.1.68 *karttari śaP*). Since no derivation can be accomplished without recourse to book one, I have called this the controlling domain (*CD*). Pāṇini normally starts with terms, plugging in the interpretive rules afterwards. Though he thus mixes the terms and interpretative rules, the dominance of the terms is still clear. It is because of this dominance that the tradition labels book one as *saṃjñādhikāra* 'domain of names'. There is a great deal of similarity between rules which define terms and those which enumerate conventions. It is often difficult to distinguish them. Definitional terms of book one are also arranged in view of whether or not *saṃjñāsamāveśa* 'class inclusion' is intended. Anticipated conflicts and subsequent resolutions offered by rules 1.4.1 *ā kaḍārād ekā saṃjñā* and 1.4.2 *vipratiṣedhe paraṃ kāryam* are also included.

The *Aṣṭādhyāyī* may be divided into two basic organizational units: *sapādasaptādhyāyī* 'the first seven books and one quarter' and *tripādī* 'the last three quarters'. This twofold division is shown by 8.2.1 *pūrvatrāsiddham* which states that rules of the last three quarters (*tripādī*) are treated as suspended (*asiddha*) in view of rules of the first seven books and one quarter. The fact that the rules of *sapādasaptādhyāyī* are blind to the affect of rule application in the *tripādī* amounts only to a lack of interaction among rules of the two units. It does not amount to saying that the output of the *tripādī* cannot be subjected to rule application in the *sapādasaptādhyāyī*. This twofold division is dictated mostly by the derivational strategy Pāṇini uses. The *tripādī* is also constrained within itself. Its subsequent rules are treated as suspended in view of its earlier rules.

If we treat book one as the *CD*, the hierarchy of domains within the *sapādasaptādhyāyī* has to encompass books two through seven and the first quarter of book eight. Books three through five form a single domain of affixes. Since the Pāṇinian derivational process is set up with reference to bases and affixes, and operations relative to them, the domain of affixes should naturally precede the domain constituted by books six through eight. Where does book two fit in this? A major portion of rules in book two deals with compounds. Since a compound is derived with reference to syntactico-semantic conditions relative to a *pada* and also since *padas* are derived by means of introducing affixes after bases, a description of compounds should not precede the description of affixes. But where else could Pāṇini put book two? Certainly not after book eight, as that is generally treated as the terminal domain for inputs. Besides, compounds are normally considered as optional derivations. That is, a compound such as *rājapuruṣaḥ* 'king's man' alternates with *rājñaḥ puruṣaḥ*. Since they both derive from the same underlying string: (*rājan* + *Ṅas* + *puruṣa* + *sU*), the grammar must have a device to relate them at some intermediate point in derivation.

An argument may be made in favour of including the discussion of compounds in the domain of rule 4.1.1 *ṅyāp-prātipadikāt*. After all, compounds are nominal stems as are *taddhitas* and as do many *taddhita* derivates, they involve the condition of *sāmarthya* 'fitness'. Also, Pāṇini has already included here the introduction of certain affixes relative to compounds. The inclusion of compounds in book four would have been logical, finally, in view of their accent which Pāṇini discusses in book six. Thus, the question: if Pāṇini could put the discussion of derived nominals, i.e., *kṛt* and *taddhita,* in books three through five, what stopped him from including the description of compounds there? After all, compounds are derived nominals too. Aside from some operational difficulties which I shall discuss in connection with compound derivation in chapter 11, there is one obvious difficulty with such an inclusion. Pāṇini discusses compounds within the domain of *ekasaṃjñā* 'one name'. A discussion of compounds in books three through five would be inappropriate because *saṃjñāsamāveśa* 'class inclusion' is the norm here.

The domain of 1.4.1 serves as a link between books one and two. If one accepts a twofold division of the *sapādasaptādhyāyī* into *saṃjñā* and *vidhi* where *saṃjñā* is constituted by book one and *vidhi* by the rest, book two becomes a link between the two. Rules governed by 2.3.1 *anabhihite* can also serve as links between the first two books and the domain of affixation (3.1.1 *pratyayaḥ*). The domain of *ekasaṃjñā* enumerates the *kārakas* which may by lexically expressed by *vibhaktis*. The grammar introduces *vibhaktis* by rule 4.1.2 *svaujas...* which cannot apply unless rules dealing with the *kāraka* terms and *vibhakti* are brought closer to it. Similarly, rule 3.4.78, which introduces *tiṄ* affixes, cannot apply unless rules dealing with *ātmanepada-parasmaipada* etc., are brought closer to it from book one.

A twofold division of *pratyayavidhi* (books three through five) and *pratyayottaravidhi* (books six through eight) is again desirable within the section of *vidhi*. Furthermore, one can also see a distinction between the rules of book three on the one hand and four and five on the other. Book three introduces *tiṄ* (3.4.78 *tiptasjhi...*) and *kṛt* (3.1.93 *kṛd atiṅ*) affixes while four and five introduce affixes *Ṅī*, etc., (4.1.3 *striyām*), *sUP* (4.1.2 *svaujasmauṭ...*) and the *taddhita* (4.1.76 *taddhitāḥ*). Book three normally takes a verb root as an input while books four and five require a nominal stem. The output of book three could be a root (3.1.32 *sanādyantā...*), a nominal stem (1.2.46 *kṛt-taddhita-samāsāś ca*) or a *pada* ending in *tiN* (1.4.14 *sup-tiṅantaṃ padam*). The output of books four and five is a *pada* ending in *sUP* (1.4.14), an item ending in a feminine affix, or a nominal stem (1.2.46).

Book three itself may be viewed as consisting of three sections: the first dealing with the derivation of roots, the second with the derivation of *padas* ending in *tiṄ* and the third with the derivation of items ending in affixes termed *kṛt*. It is generally believed that an exception (*apavāda*) blocks the application of its related general (*utsarga*) rule. However, within the domain of 3.1.91 *dhātoḥ*, though with an exception of rules headed by 3.3.94 *striyām ktin*, a formally dissimilar (*asarūpa*) 'affix' blocks the introduction of its general counterpart only optionally (3.1.94 *vā' sarūpo' striyām*).

Rules 4.1.2 *svaujas...*, 4.1.3 *striyām* and 4.1.76 *taddhitāḥ* clearly identify three sections of books four and five. The first introduces affixes termed *sUP*, the second introduces feminine affixes and the third introduces the *taddhitas*. The second and the third sections overlap. The overlapping rules introduce the term *taddhita* whereby derived items may be termed nominal stems (*prātipadika*).

The domain of 4.1.76 *taddhitāḥ* covers rules up to the end of book five. It is the second largest domain, after the domain of 3.1.1 *pratyayaḥ* within which it is included. A subdomain of 4.1.76, headed by 4.1.82 *samarthānāṃ prathamād vā*, governs rules prior to 5.3.1 *prāg diśo vibhaktiḥ*. This subdomain allows the introduction of a *taddhita* affix after the first of a string of syntactically related *padas*. Rules contained within the subdomain of 5.3.1 deal with the introduction of affixes termed *vibhakti*. They are introduced after *kim* 'what', *bahu* 'many' and items termed *sarvanāman* (1.1.27 *sarvādīni, sarvanāmāni*, 5.3.2 *kiṃ sarvanāma...*). Indeclinables are next in order as bases. Finally, a major subdomain is headed by 5.4.68 *samāsāntāḥ* which, as the rule suggests, introduces *taddhita* affixes after items termed *samāsa* 'compound'.

The domain of *pratyayottaravidhi* covers books six through eight where rules introduce phonological changes in the shape of bases (*prakṛti*), presuffixal bases (*aṅga*) and affixes (*pratyaya*), etc. Three subdivisions may be easily discerned based on changes relative to a base (6.1.1 *ekāco dve prathamasya* — 6.3.39 *samprasāraṇasya*), changes relative to a presuffixal base (6.4.1 *aṅgasya*—7.4.97 *īca gaṇaḥ*) and changes relative to a *pada* (book eight). The first section introduces operations such as doubling (*dvitva* 6.1.1 *ekāco...*), *samprasāraṇa* (6.1.13 *śyaṅ...*), *ātva* 'replacement in *ā*' (6.1.45 *ādeca upadeśe' siti*), etc., *saṃhitā* 'junction' (6.1.72 *saṃhitāyām*), accent (*svara*: 6.1.158 *anudāttaṃ padam ekavarjam*) of roots (6.1.162 *dhātoḥ*), *taddhita* (6.1.164 *taddhitasya*) and *samāsa* 'compound' (6.1.223 *samāsasya*). The entire second quarter of book six constitutes an exception to rule 6.1.223. The third quarter of book six starts with the section generally known as *aluk* 'non-deletion by *LUK*' (6.3.1 *alug uttarapade*). What follows, beginning with rule 6.3.25 *ānaṅ ṛto dvandve* and extending up to rule 6.3.139 *samprasāraṇasya*, is a series of modifications conditioned by a following *pada* (*uttarapada*).

The succeeding five quarters of rules (6.4.1-7.4.97) introduce operations specific to a presuffixal base (*aṅga*) before an affix. The first eighteen rules introduce the lengthening of an *antya* 'final' vowel or an *upadhā* 'penultimate' vowel (1.1.65 *alo' ntyāt pūrva upadhā*) of an *aṅga*. Rule 6.4.22 *asiddhavad atrābhāt* is an interpretive rule which states that an operation introduced by rules 6.4.23 *śnān nalopaḥ* — 6.4.127 *avarṇa* ... is treated as suspended (*asiddha*) with respect to an operation introduced by another rule of this section, providing both operations share the same condition (*nimitta*). Obviously, rules of this section enjoy special status. Rule 6.4.129 *bhasya* (1.4.18 *yaci bham*; 1.4.17 *svādiṣv asarvanāmasthāne*) introduces operations specific to a presuffixal base termed *bha*.

Book seven continues with operations relative to an *aṅga*. Phonological operations given in books six and seven generally follow the order of *dvitva* 'doubling', *vikāra* 'modification', *ādeśa* 'replacement' and *āgama* 'augment' in reference to bases, presuffixal bases, affixes and their resultant strings. It is not just a coincidence that the domain of *pratyayottaravidhi* begins with *dvitva* and terminates with operations relative to *dvitva* at the end of book seven.

This summary of the content and domain-hierarchy lacks details concerning at least four rules: 1.4.1 *ā kadārād ekā saṃjñā*, 3.1.94 *vā sarūpo' striyām*, 6.4.22 *asiddhavad atrābhāt* and 8.2.1 *pūrvatrāsiddham*. These rules clearly mark off their own functional domains within the *Aṣṭādhyāyī*; domains which also touch upon some basic principles of structure and organization. For example, the domain of *ekasaṃjñā* cannot allow the assignment of more than one term (*saṃjñā*) to a single nominatum (*saṃjñin*). This constraint is applicable to rules contained within the last quarter of book one and first two quarters of book two. Elsewhere in the *Aṣṭādhyāyī* more than one term may be assigned to a single nominatum. But, the rules of the three quarters of *ekasaṃjñā* are thus arranged to disallow *saṃjñāsamāveśa* 'class inclusion'. Conflicts in the assignment of terms within the domain of *ekasaṃjñā* are resolvable by invoking rule 1.4.2 *vipratiṣedhe paraṃ kāryam.* Recall that the principle of *paratva* 'subsequent in order' requires a particular kind of conflict which commentators recognize as *tulyabalatā* 'equal strength'. That is, conflicts involving terms of the domain of *ekasaṃjñā* may be resolved on the basis of *paratva* if and only if rules which introduce the terms in question enjoy equal strength of application. Conflicts in the assignment of terms both within and without the domain of *ekasaṃjñā* may also be resolved on the basis of something other than *paratva.* I discussed in chapter 3 how *niravakāśatva* 'no scope of application' resolves conflicts without taking recourse to *paratva.* Additional inferences may also be drawn; namely, that conflicts among rules may be of other types than *tulyabalatā* and conflicts may also be resolved on the basis of something other than *paratva.*

Mention has been made of how Pāṇini formulates rules based upon generalizations abstracted from usage (see chapter 3). A general rule creates a larger domain from within which a related exception extracts its own domain. Pāṇinīyas recognize that an exception blocks its general counterpart obligatorily. However, consider rule 3.1.94 *vā' sarūpo' striyām* which provides for a formally dissimilar affix ruled as an exception in the domain of 3.1.91 *dhātoḥ* to block its general counterpart only optionally. Rules contained within the subdomain headed by rule 3.3.93 *striyāṃ ktin* are not constrained by this.

The word *asarūpaḥ* is used in 3.1.94 as a qualifier (*viśeṣaṇa*) for the affix ruled as an exception. It cannot be treated as an *adhikāra* since then it could not be carried by *anuvṛtti* to rules beyond the subdomain of 3.3.93. This obviously creates problems. For instance, two *vārttikas* both given *ad* 3.3.108 *rogākhyāyāṃ ṇvul bahulam* facilitate the derivation of *rakāraḥ* 'the letter *r*' and *rephaḥ.* The first *vārttika* (*varṇāt kāraḥ*) is a general (*utsarga*) to which the second (*rād iphaḥ*) is an exception. If 3.1.94 is treated as an *adhikāra, rād iphaḥ* will obligatorily block *varṇāt kāraḥ.* Consequently, *rakāraḥ* can never be derived. This, however, should not give one the impression that difficulties in connection with the provision of 3.1.94 do not arise beyond the subdomain of 3.3.93. Pāṇinīyas recognize three *paribhāṣās* to cope with this (see *PŚ. paribhāṣā* 68...).

Now consider the following rules.

3.1.96 *tavyattavyānīyaraḥ*
'affixes *tavya, tavyaT* and *anīyaR* occur after verbal roots'.
3.1.97 *aco yat*
'affix *yaT* occurs after a verbal root which ends in a vowel (*aC*)'.

3.2.1 *karmaṇy aṇ*
'affix *aṆ* occurs after a verbal root which co-occurs with a *pada* denoting an object (*karman*)'.
3.2.3 *āto' nupasarge kaḥ*
'affix *Ka* occurs after a verbal root which ends in *ā*, is used without any preverb and co-occurs with a *pada* denoting an object'.
3.3.94 *striyāṃ ktin*
'affix *KtiN* occurs after a verbal root when the derivate signifies feminine and *bhāva* 'action' or a *kāraka* other than a *kartṛ* is expressed as a name'.
3.3.102 *a pratyayāt*
'affix *a* occurs after a verbal root ending in an affix when the derivate signifies feminine and *bhāva* or a *kāraka* other than a *kartṛ* is expressed as a name'.

Rules 3.2.1 and 3.2.3 introduce affixes *aṆ* and *Ka* respectively. These affixes are formally similar (*sarūpa*); hence, affix *Ka*, an exception, blocks its general counterpart *aṆ* obligatorily. The same is true for affix *a* (3.3.102) obligatorily blocking the placement of affix *KtiN* (3.3.94). Note however, that the reasons differ. Affix *Ka* blocks *aṆ* obligatorily because it does not meet the condition of formal dissimilarity (*asārūpya*) of 3.1.94 *striyāṃ ktin*. Rules 3.3.94 and 3.3.102 introduce affixes *KtiN* and *a* respectively where the first is a general rule and the second its related exception. Affix *a*, however, blocks *KtiN* obligatorily because rules which introduce them are not covered by 3.1.94 *vā' sarūpo*... Rule 3.1.96 is a general rule which introduces affixes *tavyaT*, *tavya* and *anīyaR* to which rule 3.1.97 *aco yat* is an exception. These rules, however, are covered by 3.1.94 and since affix *yaT* is formally dissimilar to *tavyaT*, *tavya* and *anīyaR*, rule 3.1.97 blocks 3.1.96 only optionally. As a result we get *jeyam* 'that which should be won' as an optional form to *jetavyam* and *jayanīyam*. It should be obvious now that rule 3.1.94 carves out a special section within the *sapādasaptādhyāyī*. This section is special because the norm that an exception obligatorily blocks its general counterpart is valid here only optionally.

Rule 6.4.22 *asiddhavad atrābhat* identifies yet another special section within the *sapādasaptādhyāyī*. It states that the results of an operation *x* is treated as suspended when operation *y* is to be performed providing *x* and *y* are operations specific to the domain of 6.4.22 and both share the same condition (*nimitta*). The purpose of suspending a rule is to allow an *utsarga* 'general' rule to apply. The word *utsarga*, based upon its etymological meaning, refers to a *sthānin* 'substituendum' (*utsṛjyate ādeśena nivartyate iti utsargaḥ*). *Utsarga* refers to that which is set aside by a substitute (*ādeśa*). The reference obviously here is to *sthānin*. One can also argue that since a general (*utsarga*) rule is set aside by a particular (*viśeṣa*) rule in a manner similar to that in which a substitute sets aside a substituendum, *utsarga* shares similarities (*sādharmya*) with *sthānin*. Thus, 6.4.22 is an *adhikāra*, though an extension (*atideśa*) by nature. Its *anuvṛtti* extends up to and includes rule 6.4.129 *bhasya.* Since the domain of 6.4.129 covers rules up to the end of this quarter, and since 6.4.22 carries through 6.4.129, the scope of 6.4.22 extends through the end of this quarter. Recalling that an exception blocks a general rule obligatorily with the exclusion of rules covered by rule 3.1.94 *vā' sarūpa...* where such a blocking becomes optional, rule 6.4.22 provides for a general rule to apply under the provision of *asiddhatva.* Thus, the structuring and position of rules relative to generalizations and their related exceptions is functionally well motivated. Rule 6.4.22 characterizes this special aspect of interaction by extension as opposed to blocking.

Let us now consider the controlled derivation of *edhi,* second person singular imperative of *as* 'to be' and *śādhi,* second person singular imperative of *śās.*

(*i*) *edhi*

(*a*) *as* + *si* → 3.4.87 *ser hy apic ca*
= *as* + (*si* → *hi*)
= *as* + *hi*

(*b*) *as* + *hi* → 6.4.111 *śnāssor allopaḥ*
= (*a* → ∅) *s* + *hi*

(*c*) *s* + *hi* → 6.4.119 *ghvasor...*
= (*s* → *e*) + *hi*
= *e* + *hi*

(*d*) *e* + *hi* → 6.4.101 *hujhalyor ...*
= *e* + (*hi* → *dhi*)
= *edhi*

(*ii*) *śādhi*

(*a*) same as (a) of *edhi*

(*b*) *śās* + *hi* → 6.4.35 *śā hau*
= (*śās* → *śā*) + *hi*
= *śā* + *hi*

(*c*) *śā* + *hi* → 6.4.101 *hujhalyor...*
= *śā* + (*hi* → *dhi*)
= *śādhi*

The last rule applied in deriving both *edhi* and *śādhi* is 6.4.101 *hujhalyor....* This requires that a consonant initial (*halādi*) *hi* is replaced by *dhi* when occurring after an *aṅga* constituted by *hu* 'to offer ritual oblation' or an *aṅga* ending in a sound denoted by *jhL* (*Śs.* 8-14). But rule 6.4.101 *hujhalyor...* cannot apply since neither *e* nor *śā* end in a *jhL.* Accordingly, *hi* cannot be replaced by *dhi* since it is not occurring after an *aṅga* ending in a *jhL.* Rule 6.4.22 *asiddhavad...*must be invoked here to suspend (*asiddha*) the results of the application of rules 6.4.119 *ghvasor...,* in *edhi,* and 6.4.35 *śā hau,* in *śādhi,* in view of the application of rule 6.4.101 *hujhalyor....* If the results of 6.4.119 and 6.4.35 are both treated as *asiddha,* input strings for the application of 6.4.101 will be *ś* + *hi* and *śās* + *hi.* The condition of *hi* following an *aṅga* ending in a *jhL* is thus fulfilled by restoring the *sthānin,* i.e., *ś* and *śās.* Obviously, the substitute (*e* or *śā*) must be set aside.

Now consider the following controlled derivations where wrong forms will result if 6.4.22 is not invoked.

(*i*) *āgahi* 'second person singular Vedic imperative of *āgam* 'to come'
  (*a*) *āga* + *hi* where *m* of *āgam* is deleted by 6.4.37 *anudāttopadeśa...*
  (*b*) *āga* + *hi* where by 6.4.105 *ato heḥ*
    = **āga* + (*hi* → Ø)
    = **āga*

(*ii*) *jahi*
  (*a*) *ja* + *hi* where *han* is replaced by *ja* (6.4.36 *hanter jaḥ*)
  (*b*) *ja* + *hi* where by 6.4.105 *ato heḥ*
    = **ja* + (*hi* → Ø)
    = **ja*

As indicated above, rule 6.4.105 *ato heḥ* will require the deletion of *hi* occurring after an *aṅga* ending in *a.* If an operation which is *kṛta* (here the deletion of *m* of *āgam* and the replacement of *han* by *ja*) is not treated as suspended (*asiddha*) in view of an operation which is *kārya* (here the deletion of *hi*), wrong forms will result. It is only after treating the results of 6.4.37 and 6.4.36 as suspended that we get *āgam* and *han* as input for the application of 6.4.105. Without suspending those rules, 6.4.105 is blocked from applying, since the input strings will not be able to meet the condition of having a final *a.*

The fact that Pāṇini indicates the limits of the domain of 6.4.22 in addition to stating the requirement of identical condition (*samānanimittakatva*) this latter is crucial in this connection. Given the derivation of *rāgaḥ* 'colour, attachment' from *rañj* + *GhaÑ* where the *ñ* of *rañj* has been deleted by 6.4.27 *ghañi ca bhāvakaraṇayoḥ,* rule 7.2.116 *ata upadhāyāḥ* applies to introduce a *vṛddhi* replacement for the penultimate *a* of an *aṅga* ending in a consonant. Since rule 7.2.116 falls outside the scope of 6.4.22, the results of the application (*kṛta*) of 6.4.27 cannot be treated as suspended in view of the application (*kārya*) of 7.2.116. Had this not been the case, the *vṛddhi* of *a* could never have taken place. For, in that case, *ñ,* and not the *a,* would be penultimate.

Let us now consider an example of *samānanimittakatva.*

(*i*) *papuṣaḥ*
  (*a*) *pa* + *pā* + *vas* + *Śas*
    where affix (K) *vas* (U) has been introduced after the verbal root *pā* which yields *pa* + *pā* + *vas* after *dvitva* 'doubling'; also note that *Śas* is accusative plural

(*b*) *papā* + (*vas* → *us*) + *Śas*
where rule 6.4.64 *āto lopa iṭi ca* deletes the *ā* of the root

Remember that *samprasāraṇa* (*kṛta*) cannot be treated here as *asiddha* for the deletion of *ā* (*kārya*) since these operations have different conditions. The deletion of *ā* is conditioned by *vas* while the *samprasāraṇa* is conditioned by *Śas*.

Let us now return to 8.2.1 *pūrvatrāsiddham* which marks off two sections of the *Aṣṭādhyāyī*: the *sapādasaptādhyāyī* and the *tripādī*. The word *pūrvatra*, in view of its etymological meaning of *pūrvasmin*, refers in this context to the *sapādasaptādhyāyī*. Since the word *pūrva* 'prior' is a relative term which expects reference to *para* 'subsequent', we must decide 'prior to or subsequent to what'. Rule 8.2.1 serves as its own *avadhi* 'extent, limit'. In other words, *pūrva* and *para* here will mean respectively prior to or subsequent to rule 8.2.1. One may thus interpret rule 8.2.1 as follows: rules contained within the last three quarters of the *Aṣṭādhyāyī* are treated as suspended in view of rules contained within the first seven books and one quarter. In addition, subsequent (*para*) rules within the *tripādī* are treated as suspended in view of prior (*pūrva*) rules.

Consider *amuṣmai* which is derived by introducing *Ṅe* 'fourth triplet singular of *SUP*' after *adas*.

(*a*) *adas* + *Ṅe* by 7.2.102 *tyadādīnāmaḥ*
= *ada* + (*s* → *a*) + *Ṅe*
= *ada* + *a* + *Ṅe*

(*b*) *ada* + *a* + *Ṅe* by 6.1.97 *ato guṇe*
= *ad*(*a* + *a* → *a*) + *Ṅe*
= *ad* + *a* + *Ṅe*
= *ada* + *Ṅe*

(*c*) *ada* + *Ṅe* by 8.2.80 *adaso'ser...*
= *a*(*d* → *m*) (*a* → *u*) + *Ṅe*
= *a* + *m* + *u* + *Ṅe*
= *amu* + *Ṅe*

(*d*) *amu* + *Ṅe* by 7.1.14 *sarvanāmnaḥ smai*
= *amu* + (*Ṅe* → *smai*)
= *amu* + *smai*

(*e*) *amu* + *smai* by 8.3.59 *ādeśa pratyayaḥ*
= *amu* + (*s* → *ṣ*) *mai*
= *amuṣmai*

Rule 7.1.14 *sarvanāmnaḥ smai* requires that *smai* be substituted for *Ṅe* when *Ṅe* occurs after a pronoun (*sarvanāma*) ending in -*a*. However, the input on which this rule applies does not end in *a* but in *u*. Here it is the result of the application of rule 8.2.80 *adaso'ser...* which makes the string end in *u*. The string was *ada* + *Ṅe* before 8.2.80 applied. By invoking *asiddhatva* of 8.2.1, the string will be treated as if it were *ada* + *Ṅe*. This, in turn, will enable rule 7.1.14 to apply. If 8.2.80 is not treated as *asiddha* in view of the application of 7.1.14, *amuṣmai* can never be derived.

The interpretation that a subsequent rule of *tripādī* is treated as suspended in view of its prior rule arises because rule 8.2.1 is an *adhikāra* 'governing rule'. Consider the derivation of *godhuṅmān* 'one who is milking the cow'. Given the string *goduh* + *matUP* → *goduh* + *mat,* the *ḥ* will be replaced by *gh* (8.2.32 *dāder dhātor ghaḥ*), which, in turn, will be replaced by *g* (8.2.39 *jhalāṃ jaśo' nte*). This *g* will be further replaced by *ṅ* (8.4.45 *yaro' nunāsike* ...). At the same time, rule 8.2.37 *ekāco baśo* ... will require the *d* of *goduh* to be replaced by *dh.* Rule 8.2.37 will block the application of 8.2.39 *jhalāṃ jaśo nte* as an exception (*apavāda*). It will block 8.4.45 *yatro' nunāsike* ... as being internally conditioned (*antaraṅga*): *godhumat, godhuhmat, godhughmat* and *godhuṅmat* will be the order of derivational steps. If one does not accept rule 8.2.1 as an *adhikāra* valid through the rest of the *tripādī,* rule 8.2.10 *jhayaḥ* will find its scope of application on *godhugh* + *mat.* The result will be: **godhugh* + (*m* → *v*) *at* = *godhugh* + *vat,* an undesired form.

A further question about *asiddhatva* arises in connection with the *paribhāṣās* 1.1.49 *ṣaṣthī sthāne yogā,* 1.1.66 *tasminn iti nirdīṣṭe pūrvasya* and 1.1.67 *tasmād ity uttarasya.* These *paribhāṣās* must be supplied for the correct interpretation of rules 8.2.23 *saṃyogāntasya lopaḥ,* 8.2.26 *jhalo jhali* and 8.2.27 *hrasvāṅgāt* respectively. These rules cannot make any sense without bringing the interpretive rules close to them. Accepting the principle of *asiddhatva* will make that impossible. Patañjali declares that even though the *tripādī* is treated as suspended in view of the *sapādasaptādhyāyī,* the *paribhāṣās* will still be valid. This is possible because of the principle of *kāryakālaṃ saṃjñāparibhāṣam.* That is, *saṃjñā* 'name' and *paribhāṣā* 'interpretive rule' become meaningful only when they are joined with the corresponding operational rules. Rules such as 1.1.49 *saṣṭhi sthāneyogā,* in view of *kāryakāla,* will become vacuous without being joined with rules such as 8.2.23 *saṃyogāntasya....* This latter rule will be equally meaningless without rules such as 1.1.49. The principle of *kāryakāla* establishes *ekavākyatā* 'single sentenceness' between interpretive and operational rules. This way, one does not interpret their relationship solely in terms of *paurvāparya* 'one after the other'.

Pāṇinīyas recognize the following *paribhāṣā: pūrva paranityāntaraṅgapavādānām uttarottara balīyaḥ.* That is, a subsequent (*para*) rule is treated as more powerful than a prior rule, an obligatory (*nitya*) is more powerful than a subsequent rule, an internally conditioned (*antaraṅga*) rule is more powerful than a subsequent or obligatory rule, and an exception (*apavāda*) is treated as more powerful than a subsequent, obligatory, or internally conditioned rule.

How a prior rule is less powerful than a subsequent is the subject of 1.4.2 *vipratiṣedhe paraṃ kāryam.* Let us consider now how an obligatory rule blocks the application of a subsequent rule. Given the string *tud* + *LAṬ* where *LAṬ* is replaced by *-tip*, rule 7.3.86 *pugantalaghūpadhasya ca* requires that the penultimate (*upadhā*) short vowel *u* of *tud,* an *aṅga* (1.4.13 *yasmāt pratyayavidhis...*), be replaced by its *guṇa* counterpart. Hence, if rule 7.3.86 applies, a wrong form **tod* + *a* + *ti* will result. This result is blocked by the application of rule 3.1.77 *tudādibhyaḥ śaḥ* which introduces *Śa*. However, this application should be blocked by 1.1.5 *kṅiti ca* which blocks *guṇa* or *vṛddhi* conditioned by an affix marked with *Ṅ*. Though the affix which conditions *guṇa* by enabling *tud* to be termed an *aṅga* is marked with *Ś* and not *Ṅ*; actually, *Śa* is a *sārvadhātuka* affix by rule 3.4.113 *tiṅśit* ... and by rule 1.2.4 *sārvadhātukam apit* is treated as marked with *Ṅ*. Finally, although 7.3.86 is subsequent, it cannot apply before 3.1.77 as this latter is an obligatory rule. That is, *guṇa* or no *guṇa, Śa* must obligatorily be introduced after *tud* before *ti.*

Now let us consider an example of how an *antaraṅga* rule is more powerful than a subsequent rule. Rule 1.1.33 *prathamacarama* ... optionally assigns the term *sarvanāman* to *prathama* 'first', *carama* 'last', etc., when an operation relative to *Jas* is to be performed. In an example such as *ubhaye devamanusyāḥ* 'both gods and human beings', *ubhaya* is termed *sarvanāman.* In view of the optional nature of rule 1.1.33, the nominative plural of *ubhaya* should have two forms: *ubhaye* where *ubhaya* is termed *sarvanāman* and **ubhayāḥ* where it is not. However, there is only one correct form: *ubhaye.* The *sarvanāman* designation of *ubhaya* is assigned by 1.1.27 *sarvādīni sarvanāmāni,* a prior rule. Rule 1.1.33, even though a subsequent rule, cannot block the application of 1.1.27 by being a subsequent rule, since 1.1.27 obligatorily assigns the term *sarvanāman* to *ubhaya.* This designation is internally conditioned in the sense that *ubhaya* is listed in the group headed by *sarva.* Also, in view of 1.1.27, *ubhaya* need not depend upon *Jas* for this designation. Thus, 1.1.27 weakens and blocks 1.1.33 because of internal conditioning.

That an exception (*apavāda*) is more powerful than a subsequent rule is shown by the derivation of *dadhnā,* the instrumental singular neuter of *dadhi* 'yoghurt' where both rules 1.1.55 *anekālśit sarvasya* and 1.1.53 *ṅic ca* may become applicable. Given the string *dadhi* + *Ṭā* = *dadhi* + *ā,* rule 7.1.75 *asthidadhi...* introduces *anaṄ* as a replacement. Since *anaṄ* is constituted by more than one sound segment (*aL*) and also since *anaṄ* is marked with *Ṅ,* both 1.1.55 and 1.1.53 find their scope in deciding whether *anaṄ* should replace *dadhi in toto* or simply the final *i.* Since 1.1.53 is an exception to 1.1.55, however, 1.1.53 blocks 1.1.55 and consequently, we get *dadh* (*i* → *anaṄ*) + *Ṭā* = *dadhi* + *ana* + *ā.*

The derivation of *grāmaṇini* in *grāmiṇini kule* provides an example of how an internally conditioned rule blocks an obligatory rule. Given the string *grāmaṇī* + *Ṅī,* two rules become applicable. Rule 7.1.73 *iko 'ci vibhaktau* requires that *nUM* should be introduced as an augment to *grāmaṇī*. At the same time, rule 1.2.47 *hrasvo napuṃsake prātipadikasya* requires that the final *ī* of *grāmaṇi* be replaced by short *i*. Now, 7.1.73 is an obligatory rule because whether or not long *ī* is replaced by short *i*, either now or later, *nUM* must be introduced. The shortening of the long vowel is internally conditioned in the sense that its cause is within *grāmaṇī*, the nominal stem, itself. Since an internally conditioned rule is more powerful than an obligatory rule, 1.2.47 applies first. Rule 7.1.73 will apply later to introduce *nUM*.

Finally, let us consider an illustration of how an internally conditioned application is blocked by an exception. Consider the following rules: 6.1.87 *ād guṇaḥ* and 6.1.101 *akaḥ savarṇe dīrghaḥ*. They are both *sandhi* rules. They both introduce a single replacement in place of a sequence of two vowels in close proximity (*saṃhitā*). Rule 6.1.87 introduces a single *guṇa* replacement for an *a* and any *aC* that follows it. Rule 6.1.101 introduces a single homogeneous long vowel as a replacement for any *aK* (*a, i, u, ṛ, ḷ*) followed by its homogeneous vowel. Now consider an example: *daitya* + *ariḥ* where the final *a* of *daitya* 'demon' and the initial *a* of *ariḥ* 'enemy' are in close proximity. The locus, that is the substituendum (*sthānī*) and the cause (*nimitta*), of both *guṇa* and *savarṇa-dīrgha* 'single homogeneous long vowel replacement' are the same here. The vowels with reference to which these two operations obtain are the same. Thus, both rules are applicable.

Rule 6.1.87 *ād guṇah* is a general rule to which 6.1.101, a subsequent rule, is an exception. However, 6.1.87 also becomes an internal (*antaraṅga*) rule as compared with 6.1.101. Commentators explain that a rule may become *antaraṅga* if the cause of its application is cited first. The cause of *guṇa, a,* is cited first, but so is the cause of *savarṇa-dīrgha,* since they are the same. In this instance where *antaraṅgatva* based on *pūrvopasthiti* 'first citation of the cause' offers no resolution, the exception rule proves more powerful. That is, 6.1.87 is blocked by 6.1.101 and the result is *daity* (*a* + *a*→*ā*) *riḥ* = *daityāriḥ* 'the enemy of the demons'.

Consider another example, *ayaja indram,* which is derived from the string *ayaj* + *i* + *indram* where *a* + *i* of *ayaja* + *i* and *i* + *i* of *i* + *indram* allow the application of both 6.1.87 and 6.1.101. Here, however, the cause of *guṇa, a,* is clearly first in citation as opposed to the *i* of *i* + *indram.* Consequently, the exception of 6.1.101 cannot block the *antaraṅga* rule 6.1.87. The result is: *ayaj* (*a* + *i*→*e*) + *indram* = *ayaja indram.* An *antaraṅga* is blocked by an exception rule except where *pūrvopasthiti* of the *nimitta* favours *antaraṅga.* The *antaraṅga* of 6.1.87 is blocked by 6.1.101; the *ayaja indram* example involves, at least in part, different loci.

It should be clear from above that the structure of the *Aṣṭādhyāyī* reflects a system which focuses on rule interaction. The fact that *paurvāparya* alone should not constitute the basis of interpreting relations among rules is important. The serial ordering of domains serves certain special functions. For example, it may signal domains of possible rule application by means of scanning and term assignment. However, the real structure and organization is revealed through the network of rule interaction. It is the patterns of rule interaction within and beyond the domains that establish hierarchy among rules. The broad dichotomy of general (*sāmānya*) and particular (*viśeṣa*) rules thus receives a finer articulation. Additional details of this structure are dealt with in chapter 10.

6

Types of Rules

Pāṇini's rules have been classified in different categories based on their nature, scope and application. The purpose of a rule, in general, is to account for the derivation of correct Sanskrit utterances. This, in turn, is accomplished by applying required rules to appropriate input, such that the last such application yields an output which is the target utterance. This may give one the impression that the rules of the grammar are largely operational; in a way this is true. However, in order for the operational rules to accomplish their intent, one needs other rules, complementary in nature, whose basic function is to assist, interpret, constrain, negate or further expand the scope of operational rules. Pāṇini employs one set of rules, which I shall call operational (*vidhi*), complemented by another set which I shall call interpretational. A rule which clearly states some specific operation (*kārya*) to be performed is operational. All other rules are interpretational.

Commentators identify the following types of rules which I have classified under the above-mentioned two categories.

(*a*) technical rules (*saṃjñā*): rules which assign a particular term to a given entity
(*b*) interpretive rules (*paribhāṣā*): rules which regulate proper interpretation of a given rule or its application
(*c*) operation rules (*vidhi*): rules which state a given operation to be performed on a given input
(*d*) restriction rules (*niyama*): rules which restrict the scope of a given rule
(*e*) negation rules (*pratiṣedha*): rules which counter an otherwise positive provision of a given rule
(*f*) extension rules (*atideśa*): rules which expand the scope of a given rule, usually by allowing the transfer of certain properties which were otherwise not available
(*g*) optional rules (*vibhāṣā*): rules which render the provisions of a given rule optional
(*h*) *ad hoc* rules (*nipātana*): rules which provide forms to be treated as derived even though derivational details are missing
(*i*) heading rules (*adhikāra*): rules which introduce a domain of rules sharing a common topic, operation, input, physical arrangement, etc.

It should be remembered that operation rules form the core of the grammar. Rule types (*a*) and (*b*) are primarily interpretational. They facilitate proper interpretation and application of operation rules. Types (*d*), (*e*) and (*f*) are directly related to operation rules in the sense that (*d*) and (*e*) restrict their scope while (*f*) expands it. A distinction between (*d*) and (*e*), according to some, is unnecessary. It is argued that a provision made by a *niyama* rule is not different in nature from that made by a *pratiṣedha* rule. Those who maintain a distinction between (*d*) and (*e*) claim that (*d*) makes a positive provision, though in a restrictive fashion, while provisions made by (*e*) are purely negative. In any case, (*d*), (*e*) and (*f*) are strictly satellite categories to (*c*). One may also add type (*g*) to (*c*) as another satellite category. Rule type (*h*) is a short cut to (*c*) and hence is directly related to it. *Adhikāra* rules are substantially different in nature, and often cut across the boundary lines between various categories.

It is interesting to note that *saṃjñā, paribhāṣā* and *atideśa* rules themselves do not provide for any operation. The other types provide for an operation either obligatorily, restrictively, optionally, negatively or on an *ad hoc* basis. Furthermore, these provisional modes, with the exception of the last one, also may relate to *saṃjñā, paribhāṣā* or *atideśa* rules. However, this relationship is different in nature from their relation to *vidhi* rules. These provisional modes relate to *vidhi* rules strictly in view of an operation whereas they relate to *saṃjñā, paribhāṣā* and *atideśa* rules from the point of view of facilitating an operation. Thus, one may find restrictive, negative or optional types of rules both in the sphere of *vidhi* as well as *saṃjñā, paribhāṣā* and *atideśa.*

A detailed description of the *adhikāra* rules is given in chapter 4. A more full treatment of the other rule types will follow shortly. However, it is important first to focus upon another system of rule classification which I shall call hierarchical.

Since Pāṇini formulated his rules based on his efforts to capture certain generalizations reflected in usage, he formulated some rules with a general (*sāmānya*) scope of application. These rules are termed general (*utsarga*). He also formulated other rules, relative to *utsarga* rules, and these commonly are termed specific (*viśeṣa*). These rules define their scope within the scope of a general rule and often are treated as exceptions (*apavāda*) to that rule. Other types of specific rules in relation to a *sāmānya* are negations (*pratiṣedha*) and options (*vibhāṣā*), etc. This clearly establishes a hierarchical relationship among rules. From the point of view of the various strategies employed in the application of rules, one may also find rule types such as *nitya* 'obligatory', *para* 'subsequent', *antaraṅga* 'internally conditioned' and *bahiraṅga* 'externally conditioned'. This hierarchical relationship among rules is discussed in chapter 5.

(1) *Operation Rules*

It has been stated that operation (*vidhi*) rules provide for a certain operation to be performed. In this sense, the term *vidhi* refers to *kārya* 'operation, action'. However, since an operation obtains with reference to an operand (*kāryin*), and hence may also involve introduction of an element, *vidhi* is also used in the sense of the object of an operation. These two interpretations go hand in hand. Thus, there are certain elements which have to be introduced to form an input so that certain operations may take place. These operations, in turn, may introduce an element as object of an operation.

The derivational mechanism of the *Aṣṭādhyāyī* entails the following operations.

(1.1) placement (*pratyaya*)
(1.2) addition (*āgama*)
(1.3) replacement (*ādeśa*)
(1.4) modification (*vikāra*), and
(1.5) deletion (*lopa*)

The above classification may not appear to be in perfect accord with traditional descriptions. What I call placement generally has been referred to as *pratyayavidhi* 'operation relative to an affix'. This term, however, has been used in a much wider sense. I shall use the term 'placement' to refer to the introduction of the first affix after a base (*prakṛti*). Pāṇini derives two types of forms: those that end in a *tiṄ* (3.4.78 *tiptasjhi...*), and those that end in a *sUP* (4.1.2 *svaujas...*). Both these forms are termed *pada* (1.4.14 *suptiṅantaṃ padam*). A *pada* ending in a *tiṄ* underlies a base termed *dhātu* 'verbal root', whereas a *pada* ending in a *sUP* underlies a base termed *prātipadika* 'nominal stem'. Roots are twofold: primary roots listed in the *Dhātupāṭha*, and derived roots, terminating in affixes termed *saN*, etc. Nominal bases also are of two types: primary stems characterized by rule 1.2.45 *arthavad...*, and derived or complex stems which either terminate in a *Kṛt* (3.1.93 *kṛd atiṅ*) or a *taddhita* (4.1.76 *taddhitāḥ*) affix, or else are termed *samāsa* 'compound' (1.2.46 *kṛttaddhitasamāsāś ca*). In view of the preceding, placement should be understood as an operation which introduces an affix immediately after a base outlined as above.

(1.1) Placement (*pratyaya*)

Affixes relative to placement operation are given in books three through five under the heading 3.1.1 *pratyayaḥ* 'affix'. The following is the listing of major domains.

3.1.1 *pratyayaḥ*
3.1.2 *paraś ca*
3.1.3 *ādy-udāttaś ca*
3.1.4 *anudāttau sup-pitau*
    3.1.7 *dhātoḥ...*
    3.1.32 *sanādy-antā dhātavaḥ*

- 3.1.91 *dhātoḥ*
  - 3.2.1 *karmaṇy aṇ*
  - 3.4.117 *chandasy ubhayathā*
- 4.1.1 *ṅyāp-prātipadikāt*
- 4.1.2 *svaujas...*
  - 4.1.3 *striyām*
  - 4.1.75 *āvatyāc ca*
  - 4.1.76 *taddhitāḥ*
  - 5.4.160 *niṣpravāṇiś ca*

Rule 3.1.2 requires that affixes be placed after bases which may be either a root or a nominal stem. Rule 3.1.91 *dhātoḥ* heads a domain which requires a verbal root (*dhātu*) as its input. Similarly, 4.1.1 *ṅyāp*... requires an input which either ends in a feminine affix (*Ṅī* or *āP*) or is a nominal stem. Since feminine affixes are always introduced after nominal stems, the domain of 4.1.3 *striyām*, which introduces feminine affixes, naturally forms an interior domain within the domain of 4.1.1. Furthermore, since the output of 4.1.3 obligatorily becomes an input to 4.1.1, the latter rule has *ṅyāp* in the heading to allow such access. The output of the 4.1.1-2 interior domain has to be a *pada* ending in a *sUP*. This *pada*, under the condition of a syntactico-semantic relation, may receive an affix, such as a *taddhita*, to yield a *prātipadika*. This being the case, the output of 4.1.2 may again become an input to 4.1.2. Additionally, this output of the *taddhita* domain first may opt for access to 4.1.3 *striyām*, and then, finally become an input to 4.1.1-2. In summation, 4.1.1 allows two sets of input: *prātipadika* and items ending in a feminine affix. These latter items are derived by introducing feminine affixes to *prātipadikas*. Since *prātipadikas* also include items ending in a *kṛt*, a *taddhita* or an item termed *samāsa*, the *taddhita* and *samāsa* sections also form input to 4.1.1-2. Furthermore, this input may opt for 4.1.3 first and then for 4.1.2. This makes the domain of 4.1.1-2 cyclic; its output may re-enter as input.

The output of 3.1.5 *dhātoḥ*... is termed a *dhātu* by 3.1.32. This again forms an input to 3.1.91 *dhātoḥ*. These domains, however, do not permit cyclic applications. There are two sets of affixes introduced after items termed *dhātu* 'root': *tiṄ* and *kṛt*. The first do not form part of the placement operation because they are treated as replacements for a set of ten abstract affixes commonly referred to as *LA* (3.4.77 *lasya*; 3.4.78 *tiptasjhi*...). Affixes termed *kṛt* form part of the placement operation as they are introduced directly after the verb roots. This and my earlier observations concerning the placement of an affix in the domain of 4.1.1 characterize placement as an operation which only requires a left context constituted by a base. This, of course, is a formal condition.

The output which involves a replacement of *LA* in *tiṄ* is treated as a *pada* whereas the output which involves a *kṛt* is termed a *prātipadika*. As such, it is on par with other inputs of the domain of 4.1.1. It is interesting to note that *kṛt* affixes underlie an input other than the input of 4.1.1, but yield an output which is similar to the input of 4.1.1.

Our characterization of placement as an operation which requires a left context demands some qualification. First of all, this left context is formal and secondly, it is referenced with ablative (*pañcamī*). Thus the verbal and nominal bases required under the domain of 3.1.91 *dhātoḥ* and 4.1.1 *ṅyāp...* are both referenced by ablative in the heading rules. A left context constituted by a root can further be specified by the use or omission of a preverb, its particular class membership in the *DP* and whether or not it ends in a vowel or has a penultimate vowel. Furthermore, specification can also be made with respect to particular meanings denoted by the bases. For example, consider the following set of rules.

- 3.1.1 *pratyayaḥ*
- 3.1.2 *paraś ca*
  - 3.1.91 *dhātoḥ*
  - 3.1.92 *tatropapadaṃ saptamīstham*
  - 3.1.93 *kṛd atiṅ*
    - 3.1.95 *kṛtyāḥ*
    - 3.1.96 *tavyat-tavyānīyaraḥ*
    - 3.1.97 *aco yat*
    - 3.1.98 *por ad-upadhāt*
    - 3.1.99 *śaki-sahoś ca*
    - 3.1.100 *gada-mada-cara-yamaś cānupasarge*

The above listing allows for the placement of *kṛt* (3.1.93) affixes (3.1.1) termed *kṛtya* (3.1.95) after (3.1.2) verbal roots (3.1.91). Thus, *dhātu* 'verb root' is the left context. Rule 3.1.96 introduces the affixes *tavyaT*, *tavya* and *anīyaR* in general. Rules 3.1.97 and 3.1.98 are more specific. As a consequence, 3.1.97 specifies the left context as a root which ends in a vowel and allows the placement of affix *yaT*. Rule 3.1.98 requires that the root constituting the left context terminate in a labial stop or nasal and have *a* in its penultimate (*upadhā*) position. Similar specifications are offered by 3.1.99 and 3.1.100, both of which name roots constituting the left context with the difference being that 3.1.100 does not allow the use of any preverb with its roots.

Rule 3.1.92 *tatropapadaṃ saptamīstham* adds another dimension to the placement operation. It explains that that which is referenced by locative (*saptamī*) in this domain of *dhātu* (3.1.91) is termed *upapada* 'co-occurring *pada*'. Consider 3.2.1 *karmaṇy aṇ* where the left context is still a *dhātu* but the placement of affix *aṆ* is constrained by the term *karman* 'object' in the locative. The affix *aṆ* cannot be introduced after a root constituting the left context unless there is an *upapada* which denotes *karman*. Thus, *kumbhakāra* 'pot maker' is derived by introducing the affix *aṆ* after the verbal root *DkṛÑ* 'to do, make' under the conditions of *kumbha* + *Ṅas*, a co-occurring *pada* where *Ṅas* (genitive singular) denotes *karman*. Needless to say, the referent of *karman* is identified as an *upapada* because of its locative as provided for by 3.1.93.

Similar observations can also be made about the placement operation provided by the domain of 4.1.1 *ṅyāp-prātipadikāt*. Here, the left context is constituted by a nominal stem (*prātipadika*). Since a nominal stem can also constitute an item which is either a compound, or else ends in a *kṛt* or *taddhita* affix, nominal stems can be simple or complex. For purposes of placement operations in the domain of 4.1.1, both types of nominals can opt for access to the subdomains of 4.1.2, 4.1.3 and 4.1.76. For purposes of the placement of *sUP* affixes by 4.1.2, I shall also consider the output of the 4.1.3 subdomain to be a complex nominal. Thus, the left context for 4.1.2 can be constituted by a simple or complex nominal stem which also includes items ending in feminine affixes introduced by the subdomain of 4.1.3. Similarly, the left context of 4.1.3 can be constituted by either a simple or a complex nominal which excludes items ending in a feminine affix.

The left context constituted by the placement operation outlined in the subdomain of 4.1.76 *taddhitāḥ* is basically a simple nominal stem. However, it should be remembered that a *taddhita* derivative can re-enter the *taddhita* domain for transformation into a complex *taddhita* derivative. Furthermore, co-occurrence conditions somewhat similar to one discussed in connection with 3.1.93 may also constrain the left context.

The left context for the placement operation outlined in the domain of 4.1.1 is to a large extent similar to the one given for the domain of 3.1.91. The differences in specification of the left context of nominals are strictly 'formal' because of their being constituted by nominal stems and their being both simple and complex. In summation, left contexts are introduced by ablative. Their specification might entail enumerating them either individually or as a group, or identifying them in terms of their formal properties. Constraints can be imposed on them either by co-occurrence conditions or their denotata or both.

Placement operations do not entail specification of the right context. However, there are conditions under which a particular placement affix may be introduced. These conditions are mostly formal, syntactic or syntactico-semantic. Formal conditions generally concern the base whereas syntactico-semantic conditions may concern the base, affix, both or neither. Consider again 3.1.97 *aco yat* which introduces the affix *yaT* after a verbal root terminating in *aC* 'a vowel'. This formal condition which has been used to specify the left context also serves as a condition for the introduction of *yaT*. The same interpretation is applicable to 3.1.98.

Placement affixes introduced in the domain of *dhātu* are of two types: *tiṄ* (3.4.78 *tiptasjhi...*) or *kṛt* (3.1.93 *kṛd atiṅ*). Since affixes enumerated by 3.4.78, i.e., *tiN*, are replacements of abstract suffixes termed *LA*, they do not come under placement *LA* affixes are introduced to denote agent (*kartṛ*) or object (*karman*), in case of a transitive root and to denote agent or *bhāva* in case of an intransitive root (3.4.69 *laḥ karmaṇi...*). Thus, *LA* can denote either agent, object or action. *Kṛt* affixes are introduced to denote agent while a subset, termed *kṛtya*, denotes object and action. One may thus generalize that placement affixes introduced after verbal roots denote agent, object or action. It is understood that the signification of agent, object, or action can serve as a condition for placement affixes after verbs. One can interpret agent and object as syntactic or syntactico-semantic conditions, and *bhāva* as a semantic condition.

Other syntactico-semantic conditions may be found. For example, 3.2.123 *vartamāne laṭ* introduces affix *LAṬ* after a verb root when current time (*vartamāna*) is to be expressed. Thus *pacati* '(he) cook's is derived form *pac* + *LA* where *LAṬ* is a placement affix introduced after the verb root *pac*. *LAṬ* is a *LA* suffix; accordingly 3.4.69 *laḥ karmaṇi* ... will apply. Hence, conditions for introduction of *LAṬ* will include: a left context constituted by a root (3.1.9 *dhātoḥ*), signification of agent or object (3.4.69 *laḥ karmaṇi* ...) and current time (*vartamāna*). Similar meaning conditions can be found for introduction of other *LA* affixes.

Kṛt and *kṛtya* affixes, in addition to requiring the signification of agent, object or *bhāva*, may also require other conditions. These conditions may include, for example, signification of *karaṇa* 'instrument' or other semantic conditions.

Conditions relevent to the introduction of placement affixes after a nominal base are similar in nature. Thus *sUP* (4.1.2 *svaujas...*) affixes can be introduced either to denote nominal stem notions (*prātipadikārtha*; 2.3.46) or other semantic notions such as part-whole, container-contained, possessor-possessed, (2.3.50 *ṣaṣṭhī śeṣe*), or to denote *kāraka* relations (2.3.2 *karmaṇi dvitīyā*, etc.). The domain of 4.1.3 *striyām* clearly is a domain requiring the signification of feminine. The domain of *taddhita* affixes (4.1.76 *tāddhitāḥ*) is highly diverse as far as their significations are concerned. For example, a *taddhita* affix can be introduced to denote 'x's offspring' (4.1.92 *tasyāpatyam*), 'born there' (4.3.53 *tatra bhavaḥ*), or 'colored by the color x' (4.2.1 *tena raktaṃ rāgāt*).

(1.2) *Addition* (*āgama*)

Addition may be defined as an operation which requires both a right as well a left context. In general, the left context is the base and the right context is a placement affix. Additions are of two types, *vikaraṇas* and *āgamas*. The first type consists of those affixes which are added to a root under the conditions of a following affix, generally a *sārvadhātuka* (3.4.113 *tiṅśit sārvadhātukam*) or *ārdhadhātuka* (3.4.114 *ārddhadhātukaṃ śeṣaḥ*) affix which has replaced a *LA* suffix. For example, consider the derivation of *pacati* from *pac* + *LAṬ* where *LAṬ* is replaced by *ti* (3.4.77 *lasya*; 3.4.78 *tiptasjhi...*). Given the string *pac* + (*LAṬ* → *ti*) = *pac* + *ti*, *ti* is termed *sārvadhātuka* by 3.4.113. Rule 3.1.68 *kartari śap* requires that *ŚaP* is to be introduced after *pac* under the condition that a *sārvadhātuka* affix denoting agent follows. Thus, *pac* + *ŚaP* + *ti* = *pac* + *a* + *ti* = *pacati*. Similar *vikaraṇas* are enumerated for roots especially in view of their relationship in the classes of roots in the *DP*. Rules 3.1.69 *divādibhyaḥ śyan*, 3.1.73 *svādibhyaḥ śnuḥ*, 3.1.77 *tudādibhyaḥ śaḥ* 3.1.78 *rudhādibhyaḥ śnam*, 3.1.79 *tanādi...uḥ* and 3.1.81 *kryādibhyaḥ śnā*, for example, introduce the *vikaraṇas Śyan, Śnu, Śa, Śnam, u* and *Śnā* after various classes of roots.

It has already been indicated that the right context for the introduction of *vikaraṇas* generally is constituted by a *sārvadhātuka* or an *ārddhadhātuka* affix. These affixes are replacements for *LA* affixes. It may follow from this that *vikaraṇas* are introduced only after the *LA* affixes have been replaced by *tiṄ*. This is largely correct, although there are certain other *vikaraṇas* which may be introduced while a *LA* affix serves as right context. Consider, for example, 3.1.33 *syatāsī lṛluṭoḥ*, 3.1.34 *sib bahulaṃ leṭi* and 3.1.43 *cli luṅi* whereby *sya* and *tās*, *SiP* and *CLI* are introduced as *vikaraṇas* under condition of a right context formed by *LṚT*, *LUṬ*, *LEṬ* and *LUṄ*. The *CLI* introduced by 3.1.43 is variously replaced by *SĪC* or its exceptions outlined by rules 3.1.44 *cleḥ sic* through 3.1.66 *ciṇ bhāvakarmaṇoḥ*.

Another set of addition items, as we indicated at the beginning of this section, are termed *āgamas*. They differ from the *vikaraṇas* in that while *vikaraṇas* are introduced in reference to a right context marked by ablative (*pañcamī*), *āgamas* are introduced with a right context marked by genitive (*ṣaṣṭhī*). Furthermore, *vikaraṇas* are termed an affix (*pratyaya*) and retain their identity separately from the bases to which they are introduced. As opposed to this, *āgamas* are not termed an affix and they become part of the item to which they are introduced. Thus, they do not retain their separate identity. Another interesting difference between the *vikaraṇas* and *āgamas* is that while a *vikaraṇa* is always introduced to the right context constituted by a base, an *āgama* may be introduced to a non-base. Consider the derivation of *paṭhitā* 'he will read tomorrow' in the following section where *iṬ*, an *āgama*, is introduced to *tās*, a *vikaraṇa*.

Pāṇini marks the majority of his *āgamas* by Ṭ, *K* or *M*. Under the provisions of rules 1.1.45 *ādyantau ṭakitau* and 1.1.46 *midaco' ntyāt paraḥ*, an *āgama* marked with *Ṭ* is introduced at the beginning, while one marked with *K* is introduced at the end. Consider the derivation of *paṭhitā*, *bhīṣayate* 'he frightens' and *muñcati* 'he releases' where these examples are derived from *paṭh* + *LUṬ*, *bhī* + *ṆIC* + *LAṬ* and *muc* + *LAṬ*. Given the string *paṭh + tās + tiP* where *tās* is a *vikaraṇa* introduced before *LUṬ* (3.1.332 *syatāsī*...), and *LUṬ* is replaced by *tiP* (3.4.77-78 *lasya, tiptas*...), *tiP*, in turn, is replaced by *Ḍā* (2.4.85 *luṭaḥ*...) and is subsequently termed an *ārdhadhātuka*. The string becomes: *paṭh + tās + ā*. Rule 7.2.35 *ārdhadhātukasy*... requires that *tās* receive an *āgama iṬ*. Since *iṬ* is marked with Ṭ it should be introduced at the beginning of *tās* to yield: *paṭh + iṬ + ā = paṭh + i + tās + ā*. Later, the *ās* of *tās* will be deleted by a *vārttika* on 6.4.143 *ṭeḥ* to yield *paṭhitā*.

The last two examples entail augments which are marked with *K* and *M*. Given the string *bhī + ṆiC* where *ṆiC* has been introduced after *bhī* by 3.1.26 *hetumati ca*, 7.3.40 *bhiyo hetubhaye ṣuk* requires that *bhī* should receive the augment *ṣUK*. Since this augment is marked with *K*, it is introduced at the end on *bhī*. Thus we get *bhī + ṣUK + ṆiC =bhī + ṣ + i = bhiṣi*, a root under the provisions of 3.1.32 *sanādy*.... This enables *bhīṣi* to receive *LAṬ*, which, after the application of several rules, yields *bhīṣayate*. The last example *muñcati* is derived from *muc + LAṬ* where *LAṬ* is replaced by *tiP* and the *vikaraṇa Śa* is introduced by 3.1.77 *tudādibhyaḥ śaḥ*. Given the string *muc + Śa + tiP → muc + a + ti*, 7.1.59 *śe mucādīnām* introduces the augment *nUM* to *muc*. As *nUM* is marked with *M*, it should be introduced after the last vowel of *muc*. The result is: *mu + nUM + c + a + ti → muñcati*.

(1.3) *Replacement* (*ādeśa*)

Ādeśa operations are diverse in nature, mostly because of the diversity of the *sthānin* 'item to be replaced' which they replace. The *Mahābhāṣya* (III:159) names *vikaraṇas* such as *Śnam, Śa*, etc., *ādeśas* of *ŚaP*. I have already discussed abstract *LA* affixes and their eventual replacement by *tiṆ*. I have also explained how a *vikaraṇa* such as *CLI* is replaced by *SĪC* and its exceptions. In addition, one can also find replacements for either a part or the whole of a base. Thus, an *ādeśa* may be ruled for a base, an affix or even a single sound segment.

The *sthānin* 'item to be replaced' generally is marked by the genitive and the *ādeśa* by the nominative. The conditions for replacement are primarily right context and formal. Given the replacement formula $X_6Y_1Z_7$, one may interpret *X* as a *sthānin* which should be replaced by *Y* under conditions *Z*. However, this interpretation raises a further question. Given 6.1.77 *iko yaṇ aci*, for example, whereby *iK* (*i, u, ṛ, ḷ*), the *sthānin*, is ordered replaced by *yṆ* (*y, v, r, l*), the *ādeśa*, under the condition of a following *aC* (vowel), we must decide which, from among *y, v, r*, and *l*, is the proper replacement of *i*.

Such situations are resolved by 1.3.10 *yathāsaṃkhya*... This rule states that the assignment of equivalence should be made in the order of the elements enumerated. That is, when one finds an equal number of *sthānin* and replacements, assignment of equivalents is in the order in which the elements are listed. Rule 1.1.50 *sthāne' ntaratamaḥ* states that equivalency may also be determined on the basis of maximum similarity between *sthānin* and *ādeśa*. This similarity can be based on *sthāna* 'point of articulation', *artha* 'signification', *guṇa* 'sound quality' or *pramāṇa* 'duration'. All but *artha* refer to sounds and their attributes. Whenever there is conflict in assigning equivalency of sounds, similarity based on *sthāna* should be favoured.

For example, given the strings *daṇḍa* + *agram* and *yūpa* + *agram*, 6.1.101 *akaḥ savarṇe dīrghaḥ* will apply. This rule states that when sounds denoted by *aK* (*a, i, u, ṛ, ḷ*) are followed by vowels homogenous with them a single long vowel should replace both the preceding and the following. Thus, *a* + *a* of the above examples is replaced by *ā*, yielding *daṇḍāgram* 'top or front of the stick' and *yūpāgram* 'top or front of the ritual post'. The selection of long *ā* to replace *a* + *a* was made on the basis of their similarity in place of articulation (*sthāna*); they are both *kaṇṭhya* 'velar'.

For an example of similarity based on signification, consider the derivation of *vātaṇḍyayuvatiḥ* 'young female descendant of Vataṇḍa' where the base is *vātaṇḍyayuvati*, a *karmadhāraya tatpuruṣa* compound (1.2.42 *tatpuruṣaḥ...*) derived by combining *vātaṇḍī* + *SU* with *yuvati* + *SU*. After the compound formation, the endings are deleted. Rule 6.3.42 *puṃvat karmadhāraya...* then applies to replace *vātaṇḍī* with its corresponding masculine form. However, that form does not denote *apatya* 'offspring' which *vātaṇḍī* does. As a result, one must select *vātaṇḍya*, a masculine form which also denotes *apatya*, as a replacement for *vātaṇḍī*.

Examples of similarity based on sound quality (*guṇa*) and duration (*pramāṇa*) are not difficult to find. Consider 7.3.52 *cajoḥ ku ghiṇyatoḥ* which, under certain conditions, causes the final *c* or *j* of a root to be replaced by *kU* (*k, kh, g, gh, ṅ*; cf. 1.1.69 *aṇudit...*). We clearly see that there are two substituenda for which five substitutes are ordered. In view of 1.1.50 *sthāne...*, we select *k* and *g* as proper replacements for *c* and *j*. We do this because of their similarity in sound quality. Thus, *c* is replaced by *k* because they share sound qualities such as *aghoṣatva* 'voicelessness' and *alpaprāṇatva* 'non-aspiration'. Similarly, *j* is replaced by *g* since they are both voiced non-aspirates.

For an example of similarity based on duration, consider the derivation of *amuṣmai* 'dative singular of *adas*.' At one point of the derivation, the string is *ada* + *smai*. Rule 8.2.80 *adaso' ser...* then orders two operations:

(*a*) replacement of *d* by *m*, and

(*b*) replacement of the final *a* of *ada* by *u*.

We know from 1.1.69 that items which do not constitute an affix but are denoted by *aṆ* or marked with *U* represent their own form as well as the forms of sounds homogenous with them. In view of this, *u* of 8.2.80 can be construed as either short (*hrasva*), long (*dīrgha*) or extra-long (*pluta*). However, since the substituendum is short, we will replace it with a short *u*.

(1.4) *Deletion* (*LOPA*)

Deletion can be characterized as an operation where a non-zero *sthānin* is replaced by zero. It thus may be treated as a straightforward case of replacement. However, considering the plurality of terms by which Pāṇini accomplishes deletion and the complexity of the entire operation, it is better to treat deletion separately.

Pāṇini specifies the *sthānin* of a deletion by genitive. However, this should not be confused with his practice of locating a *sthānin* with reference to an item in the ablative (*pañcamī*; cf. 1.1.67 *tasmād...*) or locative (*saptamī*; cf. 1.1.66 *tasmin...*). Deletion in Pāṇini is a complex operation. This complexity is due primarily to (*a*) the diversity of the deleted elements, (*b*) the degree, part or whole, to which an element is deleted, (*c*) the term which accomplishes a given deletion, (*d*) the consequences, other than the non-appearance of part or whole of an element, of deletion, and (*e*) whether or not the deletion is recoverable.

In order to fully understand the process of deletion, the following set of rules must be considered.

1.1.60 *adarśanaṃ lopaḥ*
1.1.61 *pratyayasya lukślulupaḥ*
1.1.62 *pratyayalope pratyayalakṣaṇam*
1.1.63 *na lumatāṅgasya*

Rule 1.1.60 is a general rule which defines *LOPA* as 'non-appearance'. Within this general scope of deletion is included a specific domain characterized by the terms *LUK, ŚLU* and *LUP* and applies only to the deletion of an affix (*pratyaya*; cf. 1.1.61). *LOPA, LUK, ŚLU* and *LUP* thus all mean deletion or 'non-appearance of an element'. One may assume that *L*, their common element, represents non appearance. The *O* of *LOPA* may be contrasted with the *U* of *LUK, ŚLU* and *LUP*, thereby establishing the *bhedakattva* 'distinctiveness' of the two sets. The *bhedakattva* of individual deletions within the subdomain of affix deletions accomplished by *LUK, ŚLU* and *LUP* is maintained by *K, P* and *Ś*. Given the usual relationship between a general rule and corresponding specific rules, one would expect that *LOPA* excerpts its domain of application by leaving aside the domain of *LUK, ŚLU* and *LUP*. Rule 1.1.61 states that the domain of *LUK, ŚLU* and *LUP* is limited only to the deletion of an affix. Does this mean that deletion which involves zeroing of an element other than an affix is the domain of *LOPA*? The answer generally is yes. However, in order to correctly characterize the domain of *LOPA*, let us first focus on the scopes of *LUK, ŚLU* and *LUP*.

It is established that deletion by *LUK, ŚLU* and *LUP* obtains only when an affix is deleted. Affixes are listed in books three, four and five. In order to further delimit the individual domains of *LUK, ŚLU* and *LUP*, we must look for the specific deletion of affixes accomplished by the express mention of one of these terms. Looking at the process of affixal deletion, one finds that *ŚLU* is employed only to delete an affix occurring after a verb of the *juhotyādi* class (2.4.75 *juhotyādibhyaḥ śluḥ*). These roots also require reduplication conditioned by *ŚLU* (6.1.10 *ślau*). *LUP*, on the other hand, strictly is limited to deleting certain *taddhita* (4.1.76 *taddhitāḥ*) affixes where the original number and gender of the base is retained (1.2.51 *lupi yuktavad vyaktivacane*).

In summation, affix deletion is the domain of *LUK, ŚLU* and *LUP*. The domain of *LOPA* generally is the deletion of non-affixes. Within affix deletion, *ŚLU* deletes affixes after verb roots belonging to a single specific class. *LUP* deletes only *taddhita* affixes which retain the original number and gender of the base. This clearly leaves a large domain for *LUK* which, when needed, will delete affixes after verb roots or nominal stems where *ŚLU* and *LUP* cannot be employed. All other deletions normally will be accomplished by *LOPA*.

Commentators explain that, on the strength of *LUK* in 7.3.73 *lug vā duh...*, deletion by *LUK, ŚLU* and *LUP* is total. That is, these terms cause the deletion of the entire affix. This would mean that partial deletion of an element must be accomplished by *LOPA*. What is the procedure when partial deletion of an affix is desired? Theoretically at least, that should also come under the domain of *LOPA* because *LUK*, etc., do not accomplish partial deletion. This possibility necessitates a re-examination of the term 'affix deletion' used in the context of *LUK, ŚLU* and *LUP*. When it comes to the domain of *LUK*, etc., affix deletion should be interpreted as total deletion.

It should be clear from the above discussion that *LOPA* and *LUK* are the most frequent means of deletion. *LOPA* may entail total or partial deletion of an affix, at least theoretically, base or any other element. *LUK* is employed to delete affixes other than those which specifically come under the domain of *ŚLU* and *LUP*.

In understanding the consequences and the recoverability of deletion the following rules are important.

1.1.62 *pratyayalope pratyayalakṣaṇam*
1.1.63 *na lumatāṅgasya*
1.2.49 *luktaddhitaluki*
1.2.51 *lupi yuktavad vyaktivacane*

Rule 1.1.61 specifies that operations conditioned by an affix obtain even when the affix is deleted. Rule 1.1.63 stipulates that such operations do not obtain with reference to an *aṅga* if the deletion is accomplished by *LUK, ŚLU* or *LUP*. Operations conditioned by an affix, and specific to an *aṅga* (1.4.13 *yasmat...*), do not obtain when that affix is deleted. Consider *agnicit* 'he who heaped the ritual fire' which derives from *agnicit* + *SU* where *SU* is a *vibhakti* termed affix. This *SU* is deleted by *LOPA* under the provisions of 6.1.68 *halṅyādibhyo....* Rule 1.4.14 *suptiṅantaṃ padam* then applies to assign the term *pada* to *agnicit*. But since 1.4.14 assigns the term *pada* only to an item which ends either in a *SUP* 'nominal inflection' or a *tiṄ* 'verbal inflection', and since *agnicit* does not end in *SU*, which has been deleted, assignment of the term *pada* cannot be accomplished. Rule 1.1.62 resolves this difficulty on the grounds that the deletion of *SU* is not accomplished by *LUK* etc., and *agnicit* is not undergoing an *aṅga* operation. Consequently, even though *SU* has been deleted, operation *pada*-assignment may obtain on *agnicit*.

Derivates like *āghnīya* 'I may strike' present yet another aspect of affix deletion. This example is derived from *ā* + *han* + *sīy* + *i* where *sīy* is an *āgama* 'augment' termed affix. Rule 7.3.73 orders that *s* of *sīy* be deleted. This affix-deletion is partial and hence, operations characteristic of *sīy* would not obtain. The *n* of *han* would not be deleted.

In the preceding section we briefly discussed these consequences of deletion:

(*a*) *LUK, ŚLU* and *LUP* accomplish deletion of affixes only,
(*b*) deletion accomplished by *LUK, ŚLU* and *LUP* is total,
(*c*) *LOPA* may accomplish total or partial deletion of affixes as well as non-affixes,
(*d*) operations characteristic of an affix may obtain even when the affix is deleted, but not when the deletion is accomplished by *LUK, ŚLU* or *LUP* and the given operation relates to an *aṅga*, nor
(*e*) when *LOPA* deletes an affix partially.

This clearly indicates that the derivational history of a form attests to the recoverability of deletion.

Two more rules need to be discussed in connection with the consequences and recoverability of deletion: 1.2.49 *luktaddhita...* and 1.2.51 *lupi....* The first rule states that when there is the deletion of a *taddhita* by *LUK*, the feminine affix contained in the base must also be deleted by *LUK*. Consider the derivation of *viśākhaḥ* 'he who was born in the constellation *viśākhā*' from (*viśākhā* + *Ṅi* + *aṆ*) + *SU* where *viśākhā* ends in the feminine affix (*Ṭ*)*ā*(*P*). Given the string *viśākhā* + *aṆ* where *aṆ* is deleted by *LUK* (cf. 4.3.34 *śraviṣṭhā ...luk*), *ā*, the feminine affix in *viśākhā*, also must be deleted. Rule 1.2.51 entails a semantic consequence in the sense that it allows the retention of the original number and gender of the base under the condition of affix deletion by *LUP*. Consider the derivation of *pañcālāḥ* 'the country where the *pañcāla* warriors live' where the underlying string is (*pañcāla* + *ām* + *aṆ*) + *Jas*. Given the string *pañcāla* + *aṆ*, rule 4.2.81 *janapade lup* deletes *aṆ* by *LUP*. The consequence of deletion is the retention of masculine plural in *pañcālāḥ*; when the country of the *pañcāla* warriors is meant, *pañcāla* must retain, or be declined in, masculine plural.

(2) *Interpretational Rules*

It has already been stated that rules which assist the interpretation and application of operational rules will be called interpretational. They basically are of two types: *saṃjñā* 'technical rules' and *paribhāṣā* 'interpretive rules'.

(2.1) *Technical rules (saṃjñā)*

A rule which assigns a name to a linguistic element or its meaning is termed a *saṃjñā*. The term *saṃjñā* is derivable by introducing the affix *aṆ* after the verb root *jñā* used with the preverb *sam*. However, since *aṆ* may denote *bhāva* 'action', *karman* 'object' or *karaṇa* 'instrument', *saṃjñā* may be interpreted in three ways.

(*a*) *saṃjñānaṃ saṃjñā* (*bhāva*): the act of properly perceiving something,
(*b*) *yaḥ saṃjñāyate* (*karman*): that which is the object of proper perception, and
(*c*) *saṃjñāyate anayā* (*karaṇa*): that by means of which proper perception is made.

The purpose of a *saṃjñā* rule is to assign a term to a linguistic entity (object) or its meaning by means of which (*karaṇa*) proper perception (action) of those objects as well as their function may be attained. The object which is assigned a *saṃjñā* is called a *saṃjñin*. Pāṇini has used nearly one hundred technical terms which can be classified in view of their *saṃjñin* in three categories.

(*a*) those which assign a *saṃjñā* to a linguistic term,
(*b*) those which assign a *saṃjñā* to the meaning of a linguistic item, and
(*c*) those which assign a *saṃjñā* to the quality (*guṇa*) of a sound segment.

The above three categories are given the names *śabdasaṃjñā*, *arthasaṃjñā* and *dharmasaṃjñā*. For example, consider the technical terms *vṛddhi*, *prātipadika*, *dhātu*, *aṅga* and *pada*. These are names assigned to linguistic items, respectively a sound segment, nominal stem, root, presuffixal base and a fully derived word. This class of technical items is by far the largest. Technical terms assigned to the meaning of linguistic items are second in number. Thus, one finds *saṃjñās* like *vibhāṣā*, *LOPA*, *LUK*, *ŚLU* and *LUP* where *vibhāṣā*[1] is assigned to the meaning of *na vā* 'or not' and the other four terms are assigned to the meaning of *adarśana* 'non-appearance'. Smallest in number are those *saṃjñās* assigned to sound quality. Thus, we find terms *udātta*, *anudātta* and *svarita*, the high, low and circumflex pitch accents.

Pāṇini presents the majority of his technical terms in the first book. However, there are some which may be found elsewhere in the grammar. I shall call the *saṃjñās* enumerated in book one global as opposed to those enumerated elsewhere which I shall call local. For example, technical terms assigned to compound types are given in book two where compounds are discussed. Technical terms given in the domain of affixes in books three, four and five relate to particular affixes. The placement of other local *saṃjñās* should be understood in a similar manner. While I am advancing the dichotomy of global and local *saṃjñās*, I am fully aware that there are many global *saṃjñās* which are similar in nature to local ones. Mere physical placement in the grammar should not be treated as the basis for this classification. Pāṇini has placed his global definitions in book one to facilitate operations throughout the grammar. Local definitions facilitate operations locally. Their most immediate function is to facilitate an operation within a given context (*prakaraṇa*).

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[1] Note that *vibhāṣā* may not even be accepted as a technical term as it does not relate to an operation in the same way the other terms do.

Consider, for example, the definitional term *upapada* 'co-occurring *pada*' which has been characterized locally by 3.1.92 *tatropapadaṃ saptamīstham*. The rule simply states that 'that which is specified in the locative in the domain of 3.1.91 *dhātoḥ* is termed an *upapada*'. This clearly justifies calling *upapada* a local definition. Similarly, *abhyāsa* (6.1.4 *pūrvo' bhyāsaḥ*) 'doubling' finds its *saṃjñin* only locally. Many other definitional terms, especially in books three through five, are local; global definitions, however, may be employed throughout the grammar.

A question has been raised in consideration of the definitional terms *karmadhāraya* 'a subcategory of *tatpuruṣa* compounds' and *upasarjana* 'secondary constituent of a compound' which are defined by 1.2.42 *tatpuruṣaḥ...* and 1.2.43 *prathamā nirdiṣṭa...* . Why didn't Pāṇini define these terms locally in the second book with the other terms relative to *samāsa* 'compound'? It should be noted here that the *samāsa* section comes under the domain of 1.4.1 *ā kaḍārād ekā saṃjñā*. If Pāṇini had put 1.2.43 in the *samāsa* section, a conflict would have arisen between the assignment of *tatpuruṣa* and *karmadhāraya*. Since *karmadhāraya* would have been subsequent, it would have blocked the *tatpuruṣa* assignment. Similarly, Bhattacharya thinks that for reasons unknown to us, Pāṇini did not include *upasarjana* in the *samāsa* section. I think that Pāṇini placed his definitions at appropriate places, above all, for operational reasons. I shall discuss this shortly.

One of the important purposes of formulating definitions is brevity (cf. *laghvarthaṃ hi saṃjñā karaṇaṃ*, *Mbh.* on 1.1.1). This intended brevity also is alluded to in statements such as *āvartinyaḥ saṃjñāḥ bhavanti* '*saṃjñās* recur' (*Mbh.*: 1.1.1). For an insightful discussion of an important aspect of brevity, see Cardona (1969: 20) and his discussion of the *pratyāhāra iṆ*.

Bhaṭṭoji Dīkṣita remarks (*SK* ad 1.1.72) that a *saṃjñā* recurs in various rules to make its *saṃjñin* known. That is, if the *saṃjñā vṛddhi* occurs in a rule in the seventh book, rule 1.1.1 *vṛddhir ādaic* should be brought in to explain that *vṛddhi* means *ā*, *ai* and *au*. However, there is more to the function of recurring technical terms; *saṃjñās* are highly instrumental in locating the domain of possible rule application (see chapter 4 for details). They are also instrumental in projecting what further steps a particular string may take in its derivation.

It was stated in connection with the classification of definitions into global and local categories that rule 1.4.1 *ā kaḍārād ekā saṃjñā* heads a domain where only one term may be assigned. This suggests yet another aspect of definitional terms. Since within its domain, 1.4.1 does not permit more than one term to be assigned to a given entity, one may infer that assignment of more than one term may be permissible elsewhere in the grammar. Pāṇinīyas do believe that outside the domain of 1.4.1 (*ekasaṃjñā*), *saṃjñāsamāveśa* 'class inclusion' is the norm. This requires further explanation.

Rule 1.4.2 *vipratiṣedhe paraṃ kāryam* states that in matters of conflict between two rules of equal strength (*vipratiṣedha*) the rule which is subsequent in order applies. If there is a situation where a single element is equally qualified for the assignment of more than one term, 1.4.2 will be invoked. Now, Pāṇini presents his *kāraka* terms in this domain in the order of *apādāna* (1.4.24), *sampradāna* (1.4.32), *karaṇa* (1.4.42), *adhikaraṇa* (1.4.45), *karman* (1.4.49) and *kartṛ* (1.4.54). Consider the sentence

rāmo dhanuṣā mṛgaṃ vidhyati

'Rāma pierces the deer by [an arrow shot by] the bow' where 'bow' can qualify equally for assignment of the terms *apādāna* or *karaṇa*. It can be termed an *apādāna* because it serves as point of reference from whence occurs the movement away of the arrow (1.4.24 *dhruvam apāye...*). It can be termed *karaṇa* because unless there is a bow, the act of piercing the deer cannot be accomplished; 'bow' is the most instrumental means. This conflict is resolved by 1.4.2; 'bow' uniquely is termed *karaṇa*. This relative ordering of the *kāraka* terms suggesting their relative strength is more fully discussed in chapter 9.

It should be remembered here that unless there is clearly a conflict, 1.4.2 should not be invoked. Commentators also explain that 1.4.2 cannot be invoked where the conflict obtains between two rules whose relationship is one of general-exception (*utsarga-apavāda*), obligatory-nonobligatory (*nitya-anitya*), or internally conditioned-externally conditioned (*antaraṅga-bahiraṅga*; see *Kāś.* I:499) *utsargāpavādanityānityāntaraṅgabahiraṅgeṣu tulyabalatā nāsti*). The claim is that such sets of rules are lacking in equal strength (*tulyabalatā*).

There are situations in the *ekasaṃjñā* domain where *saṃjñāsamāveśa* is permitted. It has been done by express mention in order to delimit the scope of certain definitions with specific operational goals in mind. Consider, for example, rules 1.4.54 *svatantraḥ kartā* and 1.4.55 *tatprayojako hetuś ca* whereby two terms *kartṛ* and *hetu* both are assigned to the instigator of *kartṛ*. *Kāśikā* clearly states here that *ca* of 1.4.55 is used for purposes of class inclusion (*saṃjñāsamāveśārthaś cakāraḥ*). Pāṇini does the same thing when he formulates 2.1.23 *dviguś ca* whereby he extends the *tatpuruṣa* designation to *dvigu*.

It has been stated that, outside the domain of 1.4.1, class inclusion is the norm. Consequently, one may find a particular linguistic element being assigned three names, such as *pratyaya*, *kṛt* and *kṛtya* (3.1.1 *pratyayaḥ*, 3.1.93 *kṛd atiṅ*, 3.1.94 *kṛtyāḥ*). Similarly, one may find an affix being assigned terms *taddhita* and *tadrāja* (4.1.171 *te tadrājaḥ*). However, just as *saṃjñāsamāveśa* may be permitted within the *ekasaṃjñā* domain, *ekasaṃjñā* may obtain within the domain of *saṃjñāsamāveśa*. That is, there may not be two terms assigned to an entity. It should be remembered that Pāṇini often resorts to explicit mention to resolve confusion. For example, a problem could arise with regard to the assignment of the terms *gotra* (4.1.162 *apatyam...*) and *yuvan* (4.1.163 *jīvati tu...*). However, the word *tu* in 4.1.163 explicitly rules out *saṃjñāsamāveśa*.

Some further points must be discussed in connection with the description of the *saṃjñās*, namely their structure and source. It is natural that *saṃjñā* follows usage. However, since *saṃjñās* are assigned for purposes of grammar, grammatical usage can also serve as a source. Pāṇini takes many of his technical terms from the tradition. He may use them in the same sense, redefine them or leave them undefined. The *saṃjñās* which he takes from the outside world (*loka*) also may or may not be used in the same sense. In fact, we find several terms in Pāṇini which are used in both a popular as well as technical sense. An example is the term *hetu* 'cause, purpose'. It is to be remembered that technically any *saṃjñā* in Pāṇini should be treated as new irrespective of its denotatum outside the grammar, be it from the grammatical tradition or common usage. There are only two things shared by naming in the real world and naming in the grammar: one, that naming follows convention, whereby an existing entity *x* is assigned the name *y*, and the other, that *y* facilitates proper perception of *x*. Thus, a parent may name a bundle of flesh (*x*) *devadatta* (*y*) and thereafter *devadatta* (*y*) will be used to facilitate proper perception of *x*.

Pāṇini defines his terms by assigning the name *y* to *x* where *x* could be a single element, class of elements or a particular meaning of *x*. In doing this, he employs both the techniques of definition and enumeration. That is, he may formulate statements such as:

(*a*) let *x* be termed *y*, or

(*b*) let the following enumerated items be termed *y*.

Vṛddhi and *guṇa*, for example, follow (*a*) while *sarvanāman* and *dhātu* follow (*b*).

One normally expects that *x*, the nominatum, would precede *y*, the name, in a *saṃjñā* rule. Pāṇini usually follows this practice. However, there are instances where he disrupts this arrangement. Patañjali defends Pāṇini's use of the term (y) *vṛddhi* in the very first rule of the grammar on grounds of auspiciousness. However, in other instances of reverse order where Pāṇini uses the *saṃjñā* first, such as 1.2.41 *apṛkta...*, 3.1.92 *tatropapadam...*, 3.1.93 *kṛd atiṅ*, 3.1.94 *kṛtyāḥ* and 3.4.114 *ārdhadhātukam...*, Patañjali is silent.

(2.2) *Interpretive Rules* (*paribhāṣā*)

Traditionally interpretive rules are known as *paribhāṣā*. The function of these rules is to provide a check on the operational rules so that they do not suffer from faults such as *ativyāpti* 'over application', *avyāpti* 'under application' and *asambhava* 'impossible application'. That is, interpretive rules assist operational rules in precisely identifying their domain of application. Pāṇini has located about seventy-five such interpretive rules in different parts of the grammar, while the tradition recognizes more than 130 additional *paribhāṣās*. The totality of these *paribhāṣās* may be classified into three categories.

(*a*) *vācanikī:* explicitly stated by Pāṇini in the *Aṣṭādhyāyī*,

(*b*) *jñāpakasiddha:* those which Pāṇini must have implicitly assumed; the fact that all or part of a *sūtra* will become vacuous without accepting these indicates their importance, and

(*c*) *nyāyasiddha:* those which are axiomatic and owe their importance to the norms or standards of the outside world.

The last two categories of *paribhāṣās* have been created, explained and justified based on their indispensability for the correct interpretation of Pāṇini's rules. Most of them date back to Vyāḍi, Kātyāyana and Patañjali. The *Mahābhāṣya*, with its *vārttikas* as well as *paribhāṣās* of Vyāḍi, is the most important source. Among the collections of *paribhāṣās*, Nāgeśa's *Paribhāṣenduśekhara* (*PŚ*) is by far the most important text. In this section, I shall consider primarily *paribhāṣās* of the *Aṣṭādhyāyī* (see chapter 8 for the *paribhāṣās* of *PŚ*).

Pāṇini has not used the word *paribhāṣā* in his grammar. Patañjali does not try to define precisely the characteristics of *paribhāṣā*. However, some of his statements accept their importance. He compares them to a lamp which, even though placed in one place, illuminates the entire room (see *supra*, fn. 1, p. 119). Thus, a *paribhāṣā* stands in one place but whenever needed joins in defining the exact scope of application of operational rules. The question still remains, however, how a *paribhāṣā* finds its scope. How does it find the operational rule that it illuminates? Kaiyaṭa explains that a *paribhāṣā* is formulated with a built-in mark (*liṅga*) which in turn becomes its characteristic condition. In addition to this mark, a *paribhāṣā* also makes a provision for operation rules (*Mbh.* ad 2.1.1: *liṅgopādānena paribhāṣā kriyamāṇā yatra tal liṅgopālambhas tat tadvyāpnoti...*).

Since *paribhāṣās* are strictly intended for the proper application of operational rules, I shall discuss the nature of a few of them with reference to specific operations. Consider rules 1.1.46 through 1.1.56.

1.1.46 *ādyantau ṭakitau*
1.1.47 *midaco' nīyāt paraḥ*
1.1.48 *ec ig hrasvādeśe*
1.1.49 *ṣaṣṭhī sthāne yogā*
1.1.50 *sthāne' ntaratamaḥ*
1.1.51 *uraṇ raparaḥ*
1.1.52 *alo' ntyasya*
1.1.53 *ṅic ca*
1.1.54 *ādeḥ parasya*
1.1.55 *anekāl-śit sarvasya*
1.1.56 *sthānivad ādeśo' nalvidhau*

Rule 1.1.49 makes a provision whereby a genitive ending which is not interpretable otherwise in a given context is to be interpreted as meaning 'in place of'. This metarule facilitates identifying the *sthānin* 'substituendum' which a given substitute may replace. Thus, genitive becomes the characteristic mark (*liṅga*) for this *paribhāṣā*. Consider 7.3.52 *cajoḥ ku...* which, under certain conditions, orders *KU* (*k, kh, g, gh, ṅ;* 1.1.69 *aṇ-udit...*) as a substitute in place of *c* or *j*. We are faced with a problem here. There are five substitutes for two substituenda. Rule 1.1.50 resolves this by stating that a substitute must be most similar to the substituendum. As a result, we replace *c* by *k* and *j* by *g*. This maximum similarity is determined by their shared qualities (*guṇa*). Rule 1.1.51 provides that wherever *aṆ* (*a, i, u*) is ordered as a replacement for *ṛ* it automatically must be followed by *r*. Consider *kirati* 'he is scattering (things) around', derived from *kṛ + LAṬ → kṛ + tip → kṛ + ŚaP + ti = kṛ + a + ti.* Rule 7.1.100 *ṛt id dhātoḥ* orders *i* as a replacement for the *ṛ* of *kṛ*. Since the replacement *i* is denoted by *aṆ*, *i* must be followed by *r*. Thus we get *k* (*ṛ → ir*) + *a* + *ti* = *kirati.*

Rule 1.1.52 provides that a substitute ordered for a *sthānin* in genitive should replace only its final sound segment (*aL*). However, 1.1.54 states that a substitute which consists of more than a single sound segment or which is marked with *Ś* should replace the entire *sthānin*. Rule 1.1.53 is an exception to this. According to 1.1.53, a substitute which consists of more than one sound segment and is marked with *Ṅ* also replaces only the final sound segment of its *sthānin*. Consider the derivation of the complex base *dvaimātura* 'he who has two mothers' where *divmātṛ* is a compound base formed from *dvi + os + mātṛ + os.* As usual, the genitive dual *os* will be deleted after compound formation yielding *dvaimātṛ* after which the affix *aṆ* will be introduced by 4.1.115 *mātur ut saṃkhyā.* ... Note that in addition to introducing *aṆ*, this rule also requires a replacement in *u* for *mātṛ*. Needless to say, *mātṛ* is specified here in the genitive. Since *u*, the substitute, does not consist of more than one sound segment, 1.1.52 will allow it to replace only the final *ṛ* of *mātṛ*. Thus, *dvimātṛ + a(Ṇ →* 0) → *dvimāt(ṛ → ur) + a = dvimātur + a*. Also note here that 1.1.51 *uraṇ raparaḥ* will require *u*, a replacement in *aṆ*, to be followed automatically by *r*. After the *vṛddhi* replacement *ai* is introduced for the *i* of *dvimātur + a*, we get *dvaimātura*.

The derivation of *mātāpitarau* 'mother and father', a *dvandva* compound, proceeds from *mātṛ + sU + pitṛ + sU = mātṛpitṛ* after which the nominative dual ending *au* is introduced. Given the string *mātṛpitṛ +au*, the *aṅga*-final *ṛ* will be replaced by *guṇa* followed automatically by *r*: *mātṛpit(ṛ → ar) + au = mātṛpitar +au*. In the meantime, 6.3.25 *ānaṅ ṛto dvandve...* requires that *ṛ* of *mātṛ* be replaced by *ānÃṄ*. This substitute consists of more than one sound segment but is marked with *N*. Consequently it can replace only the final *ṛ* of *mātṛ*. This will give us *māt (ṛ → ānÃN) pitṛ = mātānpit(ṛ → ar) = mātānpitar + au*. The *n* will be deleted later to yield *mātāpitarau*.

It is clear from the preceding discussion that the above *paribhāṣās* are applicable to replacement operations. Our last rule, 1.1.56 *sthānivad...*, also is a *paribhāṣā* dealing with replacement. However, its provision is different. The rule in itself is complex, I shall not discuss it in detail here. Suffice it to say that this rule provides, with some restriction, for treating a substitute (*ādeśa*) as if it were its *sthānin*, so that operations characteristic of a given *sthānin* can still be performed even though it has been replaced.

Let us consider two other *paribhāṣās* with locative (*saptamī*) and ablative (*pañcamī*) as their marks.

1.1.66 *tasminn iti nirdiṣṭe pūrvasya*
'an item which is referred to by a locative ending is understood as the right context for operation on what precedes'

1.1.67 *tasmād ity uttarasya*
'an item which is referred to by an ablative ending is understood as the left context for operation on what follows'

Now consider the external *sandhi* between *dadhi + atra* which is allowed by 6.1.77 *iko yaṇ aci*. The abbreviations *iK* and *aC* are in genitive and locative respectively. Clearly then, *yṆ* (*y, v, r, l*) is being introduced as a substitute in place of *iK*. This replacement, however, is applicable only when *iK* is followed by *aC* because of 1.1.66. Thus *aC* serves as the right context for *yṆ* replacement. For details of how *y* is selected as a replacement for *i* to yield *dadhyatra* 'there is yoghurt here', see the discussion of *ādeśa* in section 1.3 of this chapter.

One may ask here, given an example of external *sandhi* in *sudhī + upāsyaḥ = sudhyupāsyaḥ* 'respected by the learned', why isn't the *u* of *su* replaced by *v* before the *ī* of *dhī* under the provisions of 6.1.77? After all, 1.1.66 only defines the right context, and 6.1.77 does not state explicitly that *aC* should follow *iK* immediately. Moreover the locative in 1.1.66 *tasminn...* is *aupaśleṣika* denoting 'proximity' which need not mean contiguity. However, when we focus on *nirdiṣṭe*, another constituent of 1.1.66 in the locative, we get the correct interpretation. The root *diś* is used in the sense of pronunciation and hence *nirdiṣṭe* means 'when pronounced contiguously'. Thus *nirdiṣṭe* qualifies *tasmin* to yield the meaning of contiguity.

The same is true about the ablative of 1.1.67. This rule specifies the left context of an operation. We know from 1.1.67 that when an operation is specified by a term in the ablative, it obtains on a following item. Consider the derivation of *āsīnaḥ* 'sitting' from *ās* + (*LAṬ* → *āna*) = *ās* + *āna* where 7.2.83 *īd āsaḥ* applies. This rule requires that *āna* be replaced by *ī*. The word *āsaḥ* is in the ablative and hence the replacement operation should be applicable to *āna* which follows *ās*. However, this rule also carries the *anuvṛtti* of *āne* from 7.2.82 *āne muk* where *āne* is in the locative. Two questions must be answered here.

(*a*) Which specification should be treated as decisive for the replacement operation, the ablative of *āsaḥ* or the locative of *āne*?

(*b*) Should *ī* replace the *sthānin* in its entirety?

If we follow the ablative specification, *āna* will serve as the locus of operation. However, if we follow the locative, *āsa* becomes the locus. If we follow both, there is no locus at all. Here the tradition invokes another *paribhāṣā*, *ubhayanirdeśe pañcamīnirdeśo baliyān* (see chapter 7, number 71). This *paribhāṣā* tells us that when specifications in the ablative and in the locative are both available, specification made by the ablative is stronger. This will clear the way for *āna* to be the locus of the replacement by *ī*. It will further cause the locative of *āne*, the element carried from the preceding rule, to be interpreted as genitive. This practice of transposition of inflectional endings (*vibhaktivipariṇāma*) dictated by the context (*prakaraṇa*) is standard practice in Pāṇinian parlance. Now we can return to question (*b*) above. What answers this question is 1.1.54 *ādeḥ parasya* which states that operations specified by the ablative obtain only on the initial sound segment (*aL*) of what follows. Given this rule, *ī* will replace only the *ā* of *āna* which follows *āsa*. Thus, *āsa* + (*ā* → *ī*)*na* = *āsīna*.

The above *paribhāṣās* relate basically to replacement. There are also two major *paribhāṣās* relating to augments. They are 1.1.46 *ādyantau ṭakitau* and 1.1.47 *mid aco 'ntyāt paraḥ* whereby we learn that an augment marked with *Ṭ* is introduced as initial element to an item specified in the genitive and an augment marked with *K* is introduced as final element. However, if an augment is marked with *M*, it is introduced after the last vowel of that for which it is specified.

It is interesting to note that these two rules can also be viewed as exceptions to 1.1.49 *ṣaṣṭhī sthāneyogā*. Consider the derivation of *kaṇitā* 'he will go tomorrow' from *kaṇ* + (*LUṬ* → *tās*) + (*ti* → (*Ḍ*)*ā*) = *kaṇ* + *tās* + *ā* where 7.2.35 *ārdhadhātukasy...* applies. This rule introduces the augment *iṬ* with reference to an *ārdhadhātuka* affix marked with genitive. In the string in question, *tās* is such an affix. If we follow 1.1.49, we will have to let *iṬ* replace *tās*, or rather, in view of 1.1.52 *alo 'ntyasya*, let it replace the final *s* of *tās*. However, since the augment *iṬ* is marked with *Ṭ* it can be introduced only as an initial element of *tās*. Similarly, in the derivation of *payāṃsi*, nominative plural of neuter *payas* 'milk', from *payas* + (*J* → ∅) *as* = *payas* + *as*, rule 7.1.72 *napuṃsakasya...* introduces the augment *nUM*. The reference for this introduction again is genitive. However, since *nUM* is marked with *M*, it can be introduced only after the final vowel of *payas*. Thus we get *paya* + *nUM* + *s* + *as* which ultimately yields *payāṃsi*.

Note also that certain items marked with *M* may involve an exception to rules 3.1.1 *pratyayaḥ* and 3.1.2 *paraś ca*. For example, consider 3.1.78 *rudhādibhyaḥ śnam* which introduces the *vikaraṇa ŚnaM* after roots of the *rudhādi* class when a *sārvadhātuka* affix denoting agent follows. Now consider the derivation of *bhinatti* 'he breaks or splits something' where *bhid* belongs to the *rudhādi* class. Given the string *bhid* + *ti* where *ti* is a *sārvadhātuka* affix which denotes agent and has replaced *LAṬ*, 3.1.78 will introduce *ŚnaM*. According to 3.1.2 *paraś ca* read with 3.1.91 *dhātoḥ*, *ŚnaM* should be introduced after the root. However, since *ŚnaM* is marked with *M*, 1.1.47 *mid aco' ntyāt paraḥ* requires that it be introduced after the last vowel of the root. Thus we get *bhi* + *ŚnaM* + *d* + *ti*.

It has been stated already that *apavāda* 'exception' *niṣedha* 'negation', *niyama* 'restriction', *atideśa* 'extension' and *vibhāṣā* 'option' are rule types which can be found among *saṃjñā*, *paribhāṣā* and *vidhi* rules. Consider, for example, the following set of rules.

1.1.27 *sarvādīni sarvanāmāni*
1.1.28 *vibhāṣā dik-samāse bahuvrīhau*
1.1.29 *na bahuvrīhau*

The last two rules are exceptions (*apavāda*) to the first which assigns the term *sarvanāman* to items enumerated in the list headed by *sarva* 'all'. Rule 1.1.28 is an exception to 1.1.27 in the sense that what 1.1.27 obligatorily provides (*nitya*) becomes optional. However, the scope of this option is severely restricted. As is clear from the negation in 1.1.29, *sarva* cannot be termed *sarvanāman* in a *bahuvrīhi* compound. However, if a *bahuvrīhi* compound is formed from constituents denoting *diś* 'direction', *sarva* optionally may be termed *sarvanāman*. Thus, 1.1.28 makes the provision of 1.1.27 optional, though in a restricted manner while 1.1.29 obligatorily negates it elsewhere. Some aspects of exception (*apavāda*) rules have already been discussed under operational and interpretation rules. Here let us briefly examine *niṣedha*, *atideśa* and *vibhāṣa* rules.

(2.3) *Negation* (*niṣedha*)

Negation traditionally has been classified into two types: *paryudāsa* and *prasajya*. The *Mahābhāṣya* and subsequent commentaries have extensively discussed these two aspects in connection with various rules. A detailed discussion of negation can be found in Cardona (1967). I shall briefly illustrate these types with examples from Pāṇini's rules. First, however, the basic characteristics of the *paryudāsa* and *prasajya* views of negation must be explained.

The distinctiveness of the two types stems from the two meanings of the negative particle *naÑ*: *bheda* 'difference' and *abhāva* 'absence'. The *bheda* meaning of *naÑ* is found in *paryudāsa* while *abhāva* is attached to *prasajya*. Consider the sentence *abrāhmaṇam ānaya* 'bring (someone) other than a *brāhmaṇa*' where what is negated by *a* (a replacement of *naÑ*) in *abrāhmaṇa* is a *brāhmaṇa*; one should bring someone other than a *brāhmaṇa*. Thus, what is negated here is the following constituent of the compound. The act of bringing itself is not negated. Furthermore, simply because *brāhmaṇa* is negated does not mean that qualities other than *brāhmaṇattva* 'brāhmaṇaness' are negated. Simply because one is asked to bring someone other than a *brāhmaṇa* does not mean that one can bring an animal. Whatever is to be associated with an action must be similar, at least generically, to what has been negated by *paryudāsa*. In the above example one can only bring a human being who is not a *brāhmaṇa*. In short, *paryudāsa* does not negate an action but negates the following constituent of a negative compound with the assumption that whatever is to be associated with the action must be generically similar to that which was negated.

Let us consider the sentence *anṛtaṃ na vaktavyam* 'non-truth should not be spoken'. The *na* here negates an action. What is provided by *vaktavyam* 'should be spoken' is negated by *na*. The meaning *na* here is that of *abhāva* 'absence'. This makes *niṣedha* principal and *vidhi* 'whatever is provided' secondary. *Abhāva* presumes *bhāva* 'presence'; in view of this, *prasajya* negates whatever has been tentatively provided for by the action. This distinction is very important for the correct understanding of Pāṇinian rules involving negation.

The above two sentences clearly illustrate the distinction between *paryudāsa* and *prasajya*. In *abrāhmaṇam ānaya*, the negation is accomplished by *a* which is the first constituent of a negative compound. As opposed to this, the negation in *anṛtaṃ na vaktavyam* is accomplished by *na* which is not part of any compound. In the expression *asūryaṃ paśyāni mukhāni* where the *a* of *asūryam* renders the negation, the meaning is *prasajya* or absence. The interpretation here is *sūryaṃ na paśyanti yāni mukhāni* 'the faces which do not see the sun'.

Consider the following rules.

1.1.42 *śi sarvanāmasthānam*
1.1.143 *suḍ anapuṃsakasya*

The first rule states that *Śi* (a replacement for nominative/accusative plural *Jas* and *Śas* after neuter) is termed *sarvanāmasthāna*. The second rule states that a non-neuter *ṣUT* (*sU, au, Jas; am, auṭ*: the singular, dual and plural nominative and singular and dual accusative endings) is termed *sarvanāmasthāna*. The word *anapuṃsakasya* has the negative *naÑ*. The *Mahābhāṣya* discusses its twofold interpretation. According to a *prasajya* reading, one would interpret 1.1.43 as a rule split in two: *suṭ sarvanāmasthānaṃ bhavati*, and *napuṃsakasya na bhavati*. This interpretation will create two problems. The compound *anapuṃsakasya* will not be considered syntactically related (*samartha*) because *naÑ* will not be syntactically related to *napuṃsaka*; instead, it will be related to *bhavati*. Secondly, the *sarvanāmasthāna* designation of *Śi* of 1.1.42 will be blocked. This second problem can be resolved by invoking *paribhāṣā* 62, *anantarasya vidhir bhavati pratiṣedho vā*, whereby we learn that an operation or cancellation obtains only with reference to the most immediate rule. Thus, the second interpretation of 1.1.43, *napuṃsakasya na bhavati*, can only negate the first interpretation of 1.1.43, *suṭ sarvanāmasthānaṃ bhavati*, and not 1.1.42 since that will not be most immediate.

Rule 1.1.43 may also be interpreted with reference to *anapuṃsakasya* as a *paryudāsa*. According to this view, 1.1.43 will be interpreted as *suḍ anapuṃsakasya* (*napuṃsakabhinnasya*) *sarvanāmasaṃjñaṃ bhavati* '*sUṬ*, other than one related to a neuter, is termed *sarvanāmasthāna*'. Notice that in this interpretation, the focus is on something other than a neuter. Consequently for its application, 1.1.43 will be looking for something other than a neuter. Hence the neuter *Śi* of 1.1.42 will be thrown outside the scope of the negation. Rule 1.1.43 now will not negate the assignment of *sarvanāmasthāna* in neuter but will assign *sarvanāmasthāna* for something other than a neuter. If some other rule, such as 1.1.42, does assign *sarvanāmasthāna* in neuter, that will not be negated.

The preceding discussion shows that both interpretations can accomplish the desired results. However, the *prasajya* interpretation lacks economy (*lāghava*). It involves splitting 1.1.43 and requires invoking *paribhāṣā* 62. Commentators prefer a *paryudāsa* interpretation.

(2.4) *Extension* (*atideśa*)

Commentators consider a rule *atideśa* 'extension' if it transfers certain qualities or operations to something for which they did not previously qualify. The function of an extension rule is thus to widen the scope of application of a technical or operation rule. Normally an *atideśa* rule is formulated by the affix *vatI*; consider, for example, 1.1.56 *sthānivad ādeśo 'nalvidhau*. An *atideśa* rule where *vatI* is expressly mentioned is called *śrutātideśa*. A rule where *vatI* is not expressly mentioned but its meaning is implicit is called *arthātideśa*. For example in 1.2.5 *asaṃyogāl liṭ kit*, the meaning of *vatI*, i.e., *atasmin tadbuddhiḥ* 'cognition of *x* in *y* where *x* is not' is implicit.

There are yet other classifications of *atideśa* rules: *saṃjñātideśa* 'extension of term', *sthānyātideśa* 'extension of *sthānin*' and *yuktātideśa* 'extension of same status', for example. These types are illustrated by 1.2.5 *asaṃyogāl liṭ kit*, 1.1.56 *sthānivad ādeśo' nalvidhau* and 1.2.51 *lupi yuktavad vyaktivacane* respectively. Rule 1.2.5 provides for certain affixes to be termed *kit*. Rule 1.1.56 extends the status of a *sthānin* 'substituendum' to its *ādeśa* 'substitute'. Rule 1.2.51 allows the retention of the number and gender (*vyaktivacana*) of the original base in situations where a *taddhita* affix is deleted by *LUP*.

Extension rules generally are classified into different categories depending on their function, such as *kāryātideśa* 'extension of function' or *rūpātideśa* 'extension of form'. Four other types are distinguished based upon what an *atideśa* rule provides for: *śāstrātideśa* 'extension of a rule', *tādātmyātideśa* 'extension of identity', *nimittātideśa* 'extension of condition' and *vyapadeśātideśa* 'extension of appellation'. An example of *kāryātīdeśa* is 1.1.21 *ādyantavad ekasmin* whereby we learn that operations specific to the initial (*ādi*) or final (*antya*) element of a given unit obtain even on the single element of a unit which consists only of that one element. Consider the derivation of *ābhyām*, the instrumental, dative or ablative dual of *idam* 'this', where 7.3.102 *supi ca* applies at a stage when the string is *a + bhyām*. Rule 7.3.102 requires that the final *a* of *a + bhyām* be replaced by its corresponding long vowel (*dīrgha*) when a *sUP* which begins with *yÑ* (*y*, *v*, *r*, *l*...) follows. Now the *aṅga* in *a + bhyām* is not a unit which ends in *a*. It is a unit which is constituted by *a*. Since initial and final are relative terms and also since a single unit cannot be understood as constituting its initial or final by itself, rule 1.1.21 is needed. Thus *a* of *a + bhyām* can be treated as its own final. This clears the way for its replacement by *ā* to yield *ābhyām*. Another instance of *kāryātideśa* is 1.1.62 *pratyayalope pratyayalakṣaṇam* whereby, barring some exceptions, operations specific to an affix obtain even when the affix is deleted. Note here that 1.1.21 may also be treated as *vyapadeśātideśa*. However, since *kārya* 'operation' is principal, *vyapadeśātideśa* is subsumed under *kāryātideśa*.

Rūpātideśa allows a given form *x* to have a form *y* for an operation to take place. Consider the derivation of *papatuḥ* 'they (two) protected' which is derived from *pā + LIṬ*. *LIṬ* is replaced by *tas* 'third person dual' which, in turn, is replaced by *atus*. Given the string *pā + atus*, 6.4.64 *āto lopa...* deletes the *ā* of *pā*. Consequently, the string is reduced to *p + atus*. Rule 6.1.8 *liṭi dhātor...* must now apply to order doubling. However, since doubling is ordered with reference to the first vowel of the root and that vowel has been deleted, doubling cannot take place. To resolve this difficulty, 1.1.59 *dvirvacane' ci* extends the form *ā* to zero (∅, deletion) which had replaced the *ā*. Thus, for purposes of doubling, *p∅ + atus* will be treated as having the form *pā + atus*. This will yield *pā + pā + atus*, as doubling takes effect. Immediately thereafter *pā + pā + atus* must forever be treated as *pā + p + atus = pāpatus*. The scope of *rūpātideśa* is highly restrictive compared to the scope of *kāryātideśa*. It should also be remembered that in all these types of *atideśa*, it is the *kārya* 'operation' which is the focus. As a result, *atideśa* in general can be looked upon as *kāryātideśa*.

Śāstrātideśa provides for the extension of application of a given rule to items referenced by a different rule. Consider 4.2.34 *kālebhyo bhavavat* which introduces *taddhita* affixes after stems denoting *kāla* 'time' under the meaning condition *sāsya devatā* '...is the deity of'. The introduction of these affixes is further constrained by the qualifier *bhavavat* 'in a manner similar to *bhava*'. This apparently refers to the domain of 4.2.92 *śeṣe*. That is, whatever affixes are introduced after bases denoting *kāla* in the domain of 4.2.92, the same affixes along with their qualifications may be introduced after the same time-denoting bases to denote *sāsya devatā* under the provisions of 4.2.34. This is clearly an instance of transfer of rule (*śāstrātideśa*).

Rule 2.1.2 *sub āmantrite parāṅavat svare* can be considered an example of *tādātmyātideśa*. This rule states that for purposes of accent, a preceding *pada* is treated as part of a following *pada* provided this latter ends in vocative singular (*āmantrita*). Given the string *madrāṇāṃ rājan* 'O king of the Madra' where *rājan* is in the vocative singular following *madrāṇām*, *madrāṇām* will be treated as part of *rājan*. *Madrāṇāṃ rājan* will be treated as one *pada* and 6.1.198 *āmantritasya ca* will assign an initial *udātta* accent (*ādyudātta*). In the absence of 2.1.2, *rājan* would have received *anudātta*.

Rule 1.3.62 *pūrvavat sanaḥ* exemplifies *nimittātideśa*. This rule states that the conditions under which a root, while not ending in *saN*, receives *ātmanepada*, are extended so that the root receives *ātmanepada* even when it ends in a *saN*. Consider *śiśayiṣate* 'he wishes to recline' which is derived by introducing the affix *saN* after the verbal root *śīṄ*. Now, *śīṄ* takes *ātmanepada* endings because it is marked with *Ṅ* (1.3.12 *anudāttaṅita...*). *Ṅ* is the *nimitta* which conditions the occurrence of *ātmanepada* after *śīṄ*. Rule 1.3.62 extends this *nimitta* to the *saN* derivates of this root.

(2.5) *Option* (*vibhāṣā*)

Rule 1.1.44 *na veti vibhāṣā* defines *vibhāṣā* as the meaning of *na vā* 'or not'. There are three types of *vibhāṣā: prāpte* whereby something provided as obligatory (*nitya*) is made optional, *aprāpte* whereby something not provided for is provided optionally and *ubhayatra* where both *prāpte* and *aprāpte* provisions are made optional. Rule 1.3.77 *vibhaṣopapadena pratīyamāne*, for example, optionally introduces *ātmanepada* endings. This option is constrained by two factors. First, the root which qualifies for this option must co-occur with another *pada*, and second, the co-occurring *pada* must indicate that the fruit of the action accrues to the agent. Thus, one gets sentences such as *svaṃ kaṭaṃ kurute* 'he is making a mat for himself' where the co-occurring *pada svam* 'his own' indicates that the fruit of the action, here a mat, is intended for the agent. This makes *karoti*, the use of *parasmaipada*, or *kurute*, the use of *ātmanepada* optional. Remember that rules 1.3.72 *svaritañitaḥ*... through 1.3.76 *anupasargāj jñaḥ* provide for *ātmanepada* endings obligatorily (*nitya*). Rule 1.3.77 makes that obligatory provision optional.

For an example of *aprāpte vibhāṣā*, consider rule 1.2.3 *vibhāṣorṇoḥ*. This rule states that an affix with initial *iṬ* optionally is treated as marked with *Ṅ* if it occurs after the verb root *urṇuÑ* 'to cover'. This option will yield two forms: *prorṇuvitā* and *prorṇavitā* 'he who is to cover', both derived from the underlying string *pra* + *urṇu* + *i* + *tṛ*. The affix with initial *iṬ* is *tṛC*. The *a* of *pra* and the *u* of *urṇu* will be replaced by a single *guṇa* vowel to yield *prorṇu*. Given the string *prorṇu* + *i* + *tṛ*, the *u* of *prorṇu* will either be replaced by its *guṇa* counterpart *o* or else by *uvaṄ*, depending on whether or not *i* + *tṛ* is treated as marked with *Ṅ*. This is the option which 1.2.3 provides. Note in this context that 1.1.5 *kṅiti ca* disallows any *guṇa* or *vṛddhi* replacements if those replacements are conditioned by an affix marked with *K*, *G* or *Ṅ*. A *guṇa* replacement optionally will be available under the provisions of 1.2.3. Thus, what was *aprāpta* 'not provided for' by 1.1.5 became *prāpta* 'optionally available'. If the string *prorṇu* + *i* + *tṛ* opts for treating *i* + *tṛ* as marked with *Ṅ*, a replacement of *u* by 7.3.84 *sārvadhātuka*... will be blocked. Rule 6.4.77 *aciśnudhātu*..., read with 1.1.53 *ṅic ca*, will then apply to replace *u* with *uvaṄ*: *prorṇ(u → uv)* (*ĀṄ* → ∅) + *i* + *tṛ* = *prorṇuvitṛ*. If, on the other hand, *i* + *tṛ* is not treated as marked with *Ṅ*, *u* will be replaced by *o* which, in turn, will be replaced by *av* by 6.1.78 *eco 'yavāyāvaḥ* to yield *prorṇ(u → o → av)* +*i* + *tṛ* = *prorṇavitṛ*.

The third type of *vibhāṣā* is *ubhayatra* or *prāptāprāpta*. A classic example of this type is furnished by 6.1.30 *vibhāṣā śveḥ* whereby the root *śvi* 'to go, move towards' optionally is ordered to undergo *samprasāraṇa* before affixes *LIṬ* and *yaṄ*. Consider the derivation of *śuśāva* and *śiśvāya*, the optional third person singular perfect forms of *śvi*. Given the string *śvi* + *a* where *a* is a *ṆaL* (3.4.81 *liṭaḥ*...) replacement of *tiP* (3.4.78 *tiptas*...) which, in turn, is a replacement for *LIṬ*, rule 6.1.30 *vibhāṣā śveḥ* applies. The *v* of *śvi* will be replaced by its *samprasāraṇa* counterpart *u* and the resultant string *ś(v → u)i* + *a* = *śui* + *a* will undergo application of 6.1.108 *samprasāraṇāc ca* whereby the sequence *u* + *i* will be replaced by *u*. This will yield *śu* + *a* which will then go through doubling (6.1.8 *liṭi dhātor*...) to yield *śu* + *śu* + *a*. The *u* of the second *śu* will then undergo *vṛddhi* (7.2.115 *aco 'ñṇiti*) and *āy* replacement (6.1.78 *eco 'yavāyāvaḥ*) yielding *śu* + *ś(u → au → āv)* + *a* = *śuśāva*.

If, however, the *samprasāraṇa* option of 6.1.30 is not accepted, the result will be *śiśvāya*. In this case, doubling will yield *śvi + śvi + a* where *i* of the second *śvi* will undergo *vṛddhi*. The resulting *ai* will then be replaced by *āy*: *śvi + śv(i → ai → āy) + a = śvi + śvāy + a = śviśvāya*. The *v* of *śvi* will be dropped by 7.4.60 *halādi śeṣaḥ* to finally yield *śiśvāya*. Note here that the two previous types of *vibhāṣā* were illustrated by explaining how a provision which was available (*prāpta*) was made optional, and how a provision which was not available (*aprāpta*) optionally was made available. It is natural then that I now explain how 6.1.30 provides option with reference to both *prāpta* and *aprāpta-vibhāṣā*.

Rule 1.1.44 defines the meaning of *na* 'negation' and *vā* 'option' as *vibhāṣā*. A question is raised in the *Mahābhāṣya* (I:324) whether the expression *navā* in this rule should be interpreted as one particle (*nipāta*) *navā* or two particles *na* and *vā*. If we read it as one particle it can only give us the meaning of negation, as is attested by the usage *grāmo bhavatā gantavyo navā* 'will you go to the village or not'. If this negation then becomes the meaning of *vibhāṣā* it can only provide options in cases of *aprāpta-vibhāṣā*. On the other hand, one may argue that the question of a negative interpretation does not arise in *aprāpta* cases, since it is ridiculous to negate a provision when no such provision is available. To resolve this problem and also to justify the function of *navā* in *aprāpta* cases, one has to resort to a *prasajya* view of negation. That is, the very fact that a negative provision is made implies that a positive provision exists. How else can one make a negative provision without having a positive one first? Thus in the *aprāpta* cases, first a positive provision will be implicitly assumed and then a negative option will be made.

However, this negative *navā* interpretation cannot work in instances of *prāpta-vibhāṣā*, since a positive provision is explicitly stated, and the question of its implicit assumption for purposes of negation cannot arise. Consequently, negation will simply cancel the positive provision and the result will be a single form. In order to clear this up, Patañjali states (*Mbh.* I:326-27) that *navā* should not be interpreted as one particle with a negative meaning but as two particles *na* and *vā* meaning negation and option respectively. With this interpretation, the negative *na* will not have any purpose in *aprāpta-vibhāṣā*, but, *vā* will provide two optional forms. This interpretation will also work in instances of *prāptāprāpta-vibhāṣā* where *na* will first negate *prāpta* thereby bringing *prāpta* and *aprāpta* on a par. Consequently, *vā* will apply to provide the optional forms. The only condition is that *na* must negate first before *vā* provides the options.

Let us see how 6.1.30 *vibhāṣā śveḥ* is interpretable in terms of the three *vibhāṣās*. It can be interpreted as an instance of *prāpta vibhāṣā* if one carries, through *anuvṛtti*, the word *kit* 'marked with *K*' from 6.1.15 *vacisvapi*.... As a result, the obligatory *samprasāraṇa* which is ruled by 6.1.15 will be made optional by 6.1.30. On the other hand, if *kit* is not brought by *anuvṛtti* and the optional *samprasāraṇa* is interpreted as applicable to all the *LIṬ* instances, whether they be *kit* or *akit* 'not marked with *K*', with the additional stipulation that the now available optional *samprasāraṇa* of *kit* will be blocked by 6.1.15 which will act as prior exception to 6.1.30, we find an instance of *prāptāprāpta* or *ubhayatra-vibhāṣā*. Thus, an instance of *LIṬ* marked by *kit* will receive obligatory *samprasāraṇa* by 6.1.15 *via* this stipulation. *Kit* instances will have *samprasāraṇa* as *prāpta* while those of *akit* will have it as *aprāpta*. This would then mean that *na* will first negate the *prāpta samprasāraṇa* of *kit* which subsequently *vā* will make optional. As far as *akit samprasāraṇa* goes, *na* would not have any purpose. It is *vā* which would provide the option.

Commentators also refer to yet another type of *vibhāṣā* commonly known as *vyavasthita-vibhāṣā* 'fixed option'. This option applies only to some limited forms. The generally accepted view is that *vyavasthita-vibhāṣā* offers *vidhi* 'operation' by *vā* or *niṣedha* 'negation' by *na* only with reference to specific examples. Rule 6.1.27 *śṛtaṃ pāke* is an instance of this type of *vibhāṣā*. This rule provides the *ad hoc* (*nipātana*) derivation of the word *śṛtam* when *pāka* 'cooking' is denoted. The underlying root for *śṛtam* is *śrā* 'to cook'. What 6.1.27 provides is this: root *śrā* optionally takes the form *śṛ* when affix *Kta* follows, whether or not *śrā* ends in affix *ṇiC*. If we interpret the *vibhāṣā* carried from 6.1.27 as a general option under the particular meaning condition *pāka*, all the occurrences of *śrā* will be replaced by *śṛ* only in the context of *kṣīra* and *havi*. Thus we get *śṛtaṃ kṣīram* 'the rice pudding is cooked' and *śṛtaṃ haviḥ* 'the food for ritual oblation is cooked'. However if what is cooked is not *kṣīra* or *havi*, *śrā* will not be replaced by *śṛ*. Other instances of *vyavasthita-vibhāṣā* are provided by 2.4.55 *ajer vyaghañapoḥ*, 3.2.124 *laṭaḥ śatṛśānacāv...* and 1.4.5 *vāmi*.

Pāṇini also uses *vā* and *anyatarasyām* in the sense of *vibhāṣā*. The names of earlier grammarians, too, are sometimes mentioned to indicate options. Thus, rules 2.4.40 *lity anyatarasyām*, 2.4.50 *vibhāṣā luṅlṛṅoḥ*, 2.4.55 *vā liṭi* and 8.3.19 *lopaḥ śākalyasya* all use different terms to provide for optionality. There is considerable debate whether or not Pāṇini intended to differentiate types of options by using these various terms. One would expect that since he uses more than one term for option, he must have some special differentiations in mind. A recent interpreter of Pāṇini has tried to establish some kind of variation in dialect or style based upon the use of the various terms. However, the tradition does not accept this view. For contemporary studies dealing with optional rules and establishing stylistic variations corresponding to the above terms for option, see Kiparsky (1980) and Sharma (1983). It should be understood in this context that optional variants should not be treated as substandard or incorrect. In Pāṇini's eyes they are all equally correct. Since grammar only accounts for correct usage, the question of standard and substandard or preferred and incorrect variants does not arise.

Optional rules where Pāṇini uses names of earlier grammarians need some explanation. There are two views on this. According to one view, the citation of a grammarian's name in a given rule is interpreted as a reference to an authority (*pramāṇa*). As a result, the form attested by that rule becomes an obligatory form and not an option. According to the second view, such a citation would single out one grammarian according to whom a given form is attested. This interpretation allows for the existence of other forms to which other grammarians may attest. This interpretation clearly supports the view that rules with names of grammarians are option rules. The first view is known as *kāryaśabdavāda*, the second *nityaśabdavāda*. The Pāṇinian tradition subscribes to the second view.

There are instances of rules where the name of a grammarian is cited along with the use of *vā*, one of the terms which Pāṇini uses to denote option. Consider 6.1.92 *vā supy āpiśaleḥ*. *Kāśikā* clearly states that in these instances *vā* will provide for option. Why then did Pāṇini use the name of *Āpiśali* when *vā* is already there to account for the option? *Kāśikā* says that by citing *Āpiśali* along with *vā*, Pāṇini intends to express respect for *Āpiśali* (*Kāś*. ad 6.1.92 *āpiśaligrahaṇam pūjārtham vety ucyata eva*). Rules such as 1.2.55 *tṛṣimṛṣikṛṣeḥ kāśyapasya*, 5.4.112 *gireś ca senakasya*, 6.1.123 *avaṅ sphoṭāyanasya* and 6.3.61 *iko hrasvo' ṅyor gālavasya* are additional examples of this nature.

(2.6) *Ad hoc* (*nipātana*)

Pāṇini uses a considerable number of rules which collectively are referred to as *nipātana 'ad hoc'* rules. Their function is to provide forms not with reference to their derivation process but simply as derived. That is, while operational rules allow us to visualize the full derivational process, *ad hoc* rules only provide the fully derived forms. Their constituents and derivational process are left to the imagination (see *Kaiyaṭa* ad 5.1.59; *Mbh.* IV:47) *vidhi nipātanayoś cāyaṃ bhedaḥ, yatrāvayavā nirdiśyante samudāyo' numīyate sa vidhiḥ. yatra tu samudāyaḥ śrūyate' vayavāś cānumīyante tan nipātanam*). Thus, Pāṇini provides certain fully derived forms without mentioning their derivation. Why — primarily for economy and to avoid conflicts with other operational rules. Normally a form which is not derivable by rules of the grammar is treated as if it were derived through *nipātana* (see *Kāś*. ad 3.1.123 *yad iha lakṣaṇenānupapannaṃ tat sarvaṃ nipātanāt siddham*).

Three goals are accomplished by the *ad hoc* rules:

(*a*) they provide for something which is not available by any other rule (*aprāptiprāpaṇa*),

(*b*) they block a provision made available by some rule (*prāptivāraṇa*), and (*c*) they indicate special meaning (*adhikārthavivakṣā*).

In addition, *nipātana* are manipulated to provide for option (*vibhāṣā*: see *Kāś.* ad 7.2.27 *vā dāntaśānta...*). However, this purpose can be subsumed under *aprāptiprāpaṇa* above. These three provisions are made by *ad hoc* rules in various areas, including affixation (*pratyaya*), replacement (*ādeśa*), augment (*āgama*), doubling (*dvirvacana*) and transposition in the shape of a base (*prakṛtipariṇāma*).

The following rules exemplify the range of *nipātanas*.

6.1.154 *maskaram-maskariṇau veṇu-parivrājakayoḥ*
3.1.129 *pāyya-sānāyya...*
3.2.26 *phalegrahir ātmambhariś ca*
3.2.59 *rtvig dadhṛk...*
7.2.30 *apacitaś ca*

Rule 6.1.154 is an example of *nipātana* involving affixes. Two examples, *maskara* 'a bamboo stick' and *maskarin* 'a wandering ascetic', are both derived from *māṄ* + *ḌUkṛÑ* =*mā* +*kṛ* where *māṄ* is a preverb. In case of *maskara*, the affix is *aC* whereas for *maskarin* it is *inI*. Given the strings *mā* +*kṛ* +*a* and *mā* +*kṛ* +*in*, augment *sŪṬ* will be introduced to yield *mā* + *s* (*ŪṬ* → ∅) + *kṛ* + *a* = *mās* + *kṛ* + *a* and *mās* + *kṛ* + *in*. The *ṛ* of *kṛ* will undergo *guṇa* and the *ā* of *mā* will be shortened. Thus we will get *m*(*ā* → *a*)*s* + *k*(*ṛ* → *ar*) + *a* = *maskara* and *m*(*ā* → *a*)*s* + *k*(*ṛ* → *ar*) +*in* = *maskarin*. Note here that the derivation above is being given for explanatory reasons. Actually, affix placement, *sŪṬ* augment and shortening of the *ā* are all accomplished by *nipātana*. That is, Pāṇini cites them as derived under the special meaning condition of *veṇu* 'bamboo stick' and *parivrājaka* 'wandering ascetic'. Affix placement and other operations are all taken for granted.

Rule 3.1.129 *pāyya-sānnāyya...* also cites four forms derived by *nipātana* under special meaning conditions. Consider, for example, *pāyya* 'a measure of weight' and *sānnāyya* 'ritual oblation of food' which respectively are derived from the underlying strings *māṄ* + *ṆyaṬ* and *sam* + *ṇīÑ* + *ṆyaṬ*. What *nipātana* does in *māṄ* + *ṆyaṬ* = *mā* + *ya* is to replace *m* by *p*. Such a replacement cannot be accomplished by any other rule. Given the string (*m* → *p*)*ā* + *ya*, 7.3.33 *āto yuk...* will introduce *yŪK* to yield *pā* + *y*(*ŪK* → ∅) + *ya* = *pāyya*. The function of *nipātana* in *sānnāyya* again is replacement. Given the string *sam* + *ṇī* + *ya*, *a* of *sam* will be replaced by *ā*. Furthermore, *ī* of *ṇī* will be replaced by the *vṛddhi* vowel *ai*. Thus we get *s*(*a* → *ā*)*m* + *ṇ*(*ī* → *ai*) + *ya* = *sām* + *ṇai* + *ya*. The basic function of a *nipātana* is now evident. Here, it will replace the *ai* of *ṇai* by *āy*. Note again that such a replacement is obviously *ad hoc*.

Rule 3.2.26 *phale grāhir...* illustrates, among other things, the application of augment *mŪM* by *nipātana*. An example is *ātmambharih* 'he who is able to support himself' where given the string *ātman* + *am* + *ḌUbhṛÑ* + *iN* = *ātman* + *bhṛ* + *i*, *ātman* receives the augment *m*(*ŪM*) by *nipātana*.

Note that the affix *iN* is also introduced after verbal root *ḌUbhṛÑ* by *nipātana*. Of course, this occurs under the condition that there is a co-occurring *pada* underlying *ātman* and denoting object. Thus, *ātma(n* → *∅)* + *m(ŪM* → *∅* + *bh(ṛ* → *ar)* + *i* = *ātmambhari*.

Rule 7.2.30 *apacitaś ca* illustrates how the shape of a base can be transposed via *nipātana*. Consider the derivation of *apacita* 'respected' from *apa* + *cāyṚ* + *Kta* where *Kta* is a *niṣṭhā* (1.1.26 *ktaktavatū niṣṭhā*) suffix introduced after the verbal root *cāyṚ* used with the preverb *apa*. Given the string *apa* + *cāy(Ṛ* → *∅)* + *(K* → *∅)ta* = *apacāy* + *ta*, 7.2.30 optionally will rule two things: the change of the *cāy* form of the root to *ci* and the disallowing of the augment *iṬ*. This will produce the form *apa(cāy* → *ci)* + *ta* = *apacita*. If the option allowed by *nipātana* is not accepted, the root will not take the form *ci* and *iṬ* will apply. This will yield the optional form *apacāy* + *i(ṭ* → *∅)* + *ta* = *apacāyita*. It should be clear from this discussion that the purpose of *nipātana* is to accomplish a variety of tasks without systematically following specific rules.

7

Saṃjñās and *Paribhāṣās*

The following is a select list of the *samjñās* and *paribhāṣās* which receive frequent reference in this volume. Exceptions to and elaborations of these definitions are not given here. However, both the first and last rules of the section of the grammar which treats the term being defined are given in the parentheses in order to facilitate easy reference to the rules where that term is more fully discussed.

A. *SAṂJÑĀS*

1. *vṛddhi* (1.1.1 *vṛddhir ādaic*)
   ā, *ai* and *au*
2. *guṇa* (1.1.2 *adeṅ guṇaḥ*)
   a, *e* and *o*
3. *saṃyoga* (1.1.7 *halo 'nantarā saṃyogaḥ*)
   a sequence of consonants
4. *anunāsika* (1.1.8 *mukhanāsikāvacano 'nunāsikaḥ*)
   a sound pronounced in the mouth and nose at once
5. *savarṇa* (1.1.9 *tulyāyasya prayatnaṃ savarṇam* — 1.1.10 *nājjhalau*)
   two or more sounds pronounced with the same articulation effort (*pratyatna*) at the same place of articulation (*sthāna*) in the oral cavity
6. *pragṛhya* (1.1.11 *īdūded-dvivacanaṃ pragṛhyam* — 1.1.19 *id-ūtau ca saptamyarthe*)
   a dual ending terminating in *ī*, *ū* or *e*
7. *ghu* (1.1.20 *dādhāghv adāp*)
   roots of the form *dā* and *dhā*, except for *dāP* 'to cut' and *daiP* 'to clean'
8. *gha* (1.1.22 *taraptamapau ghaḥ*)
   affixes *-taraP* (5.3.57 *dvivacana...*) and *-tamaP* (5.3.55-56 *atiśāyane...*)
9. *saṃkhyā* (1.1.23 *bahugaṇavatuḍati saṃkhyā*)
   bahu 'many', *gaṇa* 'group' and items ending in the affixes *vatU* (5.2.39 *yattadetebhyaḥ...*) and *Ḍati* (5.2.41 *kimaḥ...*)
10. *ṣaṭ* (1.1.24 *ṣṇāntā ṣaṭ* — 1.1.25 *ḍati ca*)
    a *saṃkhyā* which ends in *ṣ* or *ṇ*
11. *niṣṭhā* (1.1.26 *ktaktavatū niṣṭhā*)
    affixes *Kta* and *KtavatU* (3.2.102 *niṣṭhā*)
12. *sarvanāman* (1.1.27 *sarvādīni sarvanāmāni* — 1.1.38 *antaram...*)
    items listed in the set (*gaṇa*) headed by *sarva* 'all'

13. *avyaya* (1.1.37 *svarādi nipātam avyavayam* — 1.1.41 *avyayībhāvaś ca*) items listed in the set headed by *svar* 'sun, heaven' and those termed *nipāta* (1.1.56 *prāg rīśvarāran nipātāḥ*)
14. *sarvanāmasthāna* (1.1.42 *śi sarvanāmasthānam* — 1.1.43 *suḍ anapuṃsakasya*)

    Śi, a replacement for *Jas* and *Śas* after a neuter base, (cf. 7.1.20 *jaśśasoḥ śi*); also *suṬ* (*sU, au, Jas; am, auṬ*) occurring after a non-neuter base
15. *vibhāṣā* (1.1.44 *na veti vibhāṣā*)
    the meaning of *na vā* 'or not'
16. *samprasāraṇa* (1.1.45 *ig yaṇaḥ samprasāraṇam*)
    replacement of *yṆ* (*y, v, r, l*) by *iK* (*i, u, ṛ, ḷ*)
17. *lopa* (1.1.60 *adarśanaṃ lopaḥ* — 1.1.61 *pratyayasya lukślulupaḥ*)
    the meaning of *adarśana* 'non-appearance'; the non-appearance of an affix is termed *LUK, ŚLU* or *LUP*
18. *ṭi* (1.1.64 *aco' ntyādi ṭi*)
    that part of an item which begins with the last of its vowels
19. *upadhā* (1.1.65 *alo' ntyāt pūrva upadhā*)
    the penultimate sound segment of an item
20. *vṛddha* (1.1.73 *vṛddhir yasyācām ādis tad vṛddham* — 1.1.75 *eṅ prācāṃ deśe*)

    an element whose first vowel is a *vṛddhi*
21. *hrasva, dīrgha* and *pluta* (1.2.27 *ūkālo' jj hrasvadīrghaplutaḥ*)
    a vowel with time duration equivalent to *u*, *ū* or u^3 respectively
22. *udātta* (1.2.29 *uccair udāttaḥ*)
    a vowel pronounced with high pitch
23. *anudātta* (1.2.30 *nīcair anudāttaḥ*)
    a vowel pronounced with low pitch
24. *svarita* (1.2.31 *samāhāraḥ svaritaḥ*)
    a vowel pronounced with a combination of *udātta* and *anudātta*
25. *apṛkta* (1.2.41 *apṛkta ekāl pratyayaḥ*)
    an affix consisting of a single sound segment
26. *karmadhāraya* (1.2.42 *tatpuruṣaḥ samānādhikaraṇaḥ karmadhārayaḥ*)
    a *tatpuruṣa* (2.1.22 *tatpuruṣaḥ*) compound with constituents in syntactic coordination
27. *upasarjana* (1.2.43 *prathamānirdiṣṭaṃ samāsa upasarjanam* — 1.2.44 *ekavibhakti...*)

    an item cited in the nominative in a rule of compound formation
28. *prātipadika* (1.2.45 *arthavad adhātur apratyayaḥ prātipadikam* — 1.2.46 *kṛt-taddhita-samāsāś ca*)

    a meaningful item which is not an affix or a root; also an item which either ends in a *kṛt* (3.1.93 *kṛd atiṅ*) or a *taddhita* affix (4.1.76 *taddhitāḥ*) or is a *samāsa* 'compound'
29. *dhātu* (1.3.1 *bhūvādayo dhātavaḥ*)

items listed in the sets headed by the one beginning with *bhū* 'to be, to become'; also items terminating in affixes *saN* etc., (3.1.32 *sanādy antā dhātavaḥ*)

30. *it* (1.3.2 *upadeśe' j anunāsika it* — 1.3.8 *laśakv ataddhite*)
    a nasalized vowel of an item in *upadeśa* 'initial citation'
31. *nadī* (1.4.3 *yūštryākhyau nadī* — 1.4.6 *ṅiti hrasvaś ca*)
    feminine forms ending in *ī* or *ū*
32. *ghi* (1.4.7 *śeṣo ghy asakhi* — 1.4.9 *ṣaṣṭhīyuktaś chandasi vā*)
    forms ending in *i*, or *ū* except for *sakhi* 'friend'
33. *hrasva* (1.4.10 *hrasvaṃ laghu*)
    a short vowel
34. *guru* (1.4.11 *saṃyoge guru* — 1.4.12 *dīrghaṃ ca*)
    a short vowel occurring before a sequence of consonants, or a long vowel
35. *aṅga* (1.4.13 *yasmāt pratyayavidhis tadādi pratyaye' ṅgam*)
    a pre-suffixal base
36. *pada* (1.4.14 *suptiṅantaṃ padam* — 1.4.17 *svādiṣv asarvanāmasthāne*)
    an item which ends in a *sUP* (4.1.2 *svaujas...*) or a *tiN* (3.4.77 *tiptasjhi...*)
37. *bha* (1.4.18 *yaci bham* — 1.4.20 *ayasmayādīni ca*)
    a form which occurs before a *svādi* suffix beginning with *y* or *aC* but not a *sarvanāmasthāna*
38. *apādāna* (1.4.24 *dhruvam apāye' pādānam* — 1.4.31 *bhuvaḥ prabhavaḥ*)
    that which is *dhruva* 'fixed' when movement away (*apāya*) is denoted
39. *sampradāna* (1.4.32 *karmaṇā yam abhipraiti sa sampradānam* — 1.4.41 *anupratigṛṇaś ca*)
    that which the agent (*kartṛ*) intends (as the goal) by (means of) his action
40. *karaṇa* (1.4.42 *sādhakatamaṃ karaṇam* —1.4.44 *parikrayaṇe sampradānam anyatarasyām*)
    that which, more than anything else, serves as a means
41. *adhikaraṇa* (1.4.45 *ādhāro' dhikaraṇam* — 1.4.48 *upānvadhyāṅ vasaḥ*)
    that which serves as *ādhāra* 'locus'
42. *karman* (1.4.49 *kartur īpsitatamaṃ karma* — 1.4.53 *hṛkor anyatarasyām*)
    that which the agent most wishes to reach
43. *kartṛ* (1.4.54 *svatantraḥ kartā* — 1.4.55 *tatprayojako hetuś ca*)
    that which is *svatantra* 'independent'
44. *nipāta* (1.4.56 *prāg rīśvarān nipātāḥ* — 1.4.97 *adhir īśvare*)
    items enumerated up to rule 1.4.97 *adhir īśvare*
45. *upasarga* (1.4.58 *prādaya upasargāḥ kriyāyoge* — 1.4.59 *gatiś ca*)
    nipātas enumerated in the set headed by *pra* when used with a verb; they are also termed *gati*
46. *karmapravacanīya* (1.4.83 *karmapravacanīyāḥ* — 1.4.97 *adhir īśvare*)
    items termed *nipāta* and enumerated up to rule 1.4.97

47. *parasmaipada* (1.4.99 *laḥ parasmaipadam*)
    replacements of *LA* (3.4.77 *tiptasjhi...*) other than those denoted by *taṄ* and *āna* (*ŚānaC* and *KānaC*)
48. *ātmanepada* (1.4.100 *taṅānāv ātmanepadam*)
    replacements of *LA* denoted by *taṄ* and *āna*
49. *prathama, madhyama, uttama* (1.4.101 *tiṅas trīṇi trīṇi prathamamadhyamottamāḥ*)
50. *ekavacana, dvivacana, bahuvacana* (1.4.102 *tāny ekavacanadvivacanabahuvacanāny ekaśaḥ* — 1.4.103 *supaḥ*)
    individual members of each triplet of *tiṄ* and *sUP*
51. *vibhakti* (1.4.104 *vibhaktiś ca*)
    triplets of *tiṄ* and *sUP*
52. *saṃhitā* (1.4.109 *paraḥ sannikarṣaḥ saṃhitā*)
    maximum proximity between sounds
53. *avasāna* (1.4.110 *virāmo' vasānam*)
    cessation of speech
54. *samāsa* (2.1.3 *prāk kaḍārāt samāsaḥ*)
    items enumerated prior to 2.1.38 *kaḍārāḥ karmadhāraye*
55. *avyayībhāva* (2.1.5 *avyayībhāvaḥ*)
    compounds enumerated by rules prior to 2.1.22 *tatpuruṣaḥ*
56. *tatpuruṣa* (2.1.22 *tatpuruṣaḥ* — 2.1.23 *dviguś ca*)
    compounds enumerated prior to 2.2.23 *śeṣo bahuvrīhiḥ; dvigu* is also termed *tatpuruṣa*
57. *dvigu* (2.1.52 *saṃkhyapūrvo dviguḥ*)
    a *tatpuruṣa* compound (2.1.51 *taddhitārtha...*) with *saṃkhyā* 'number' as its first constituent
58. *bahuvrīhi* (2.2.23 *śeṣo bahuvrīhiḥ*)
    the remainder of the *tatpuruṣa* compounds
59. *dvandva* (2.2.29 *cārthe dvandvaḥ*)
    a compound denoting the sense of *ca* 'and'
60. *āmantrita* (2.3.48 *sā' mantritam*)
    a form which ends in the vocative and denotes *sambodhana* 'address'
61. *sambuddhi* (2.3.49 *ekavacanaṃ sambuddhiḥ*)
    an *āmantrita* terminating in singular
62. *pratyaya* (3.1.1 *pratyayaḥ*)
63. *upapada* (3.1.92 *tatropapadaṃ saptamīstham*)
    an item cited in the locative in the domain of 3.1.91 *dhātoḥ*
64. *kṛt* (3.1.93 *kṛd atiṅ*)
    an affix other than that denoted by *tiṄ*
65. *kṛtya* (3.1.95 *kṛtyāḥ*)
    kṛt affixes enumerated by rules prior to 3.1.133 *ṇvultṛcau*
66. *sat* (3.2.127 *tau sat*)
    affixes *Śatṛ* and *ŚānaC* (3.2.124 *laṭaḥ śatṛśānacāv...*)

67. *sārvadhātuka* (3.4.113 *tiṅśit sārvadhātukam*)
affixes denoted by *tiṄ* and marked with *Ś*
68. *ārdhadhātuka* (3.4.114 *ārdhadhātukaṃ śeṣaḥ*)
the remaining affixes
69. *taddhita* (4.1.76 *taddhitāḥ*)
affixes enumerated by rules 4.1.76-5.4.160 *niṣpravāṇiś ca*
70. *gotra* (4.1.162 *apatyaṃ pautraprabhṛti gotram*)
grandson and subsequent offspring
71. *yuvan* (4.1.163 *jīvati tu vaṃśye yuvā*)
a *gotra* offspring while his father, uncle, etc., are alive
72. *tadrāja* (4.1.172 *te tadrājāḥ*; 5.3.119 *ñyādayas tadrājāḥ*)
taddhita affixes enumerated by 4.1.166 *janapadaśabdād*... — 4.1.176 *na prācyabhargādi*... and 5.3.112 *pūgāñño*... — 5.3.119 *ñyādayas*...
73. *abhyāsa* (6.1.4 *pūrvo' bhyāsaḥ*)
the first element of a doubled string
74. *abhyasta* (6.1.5 *ubhe abhyastam*)
both the elements of a doubled string
75. *āmreḍita* (8.1.2 *tasya paramāmreḍitam*)
the second element of a string ordered for doubling by rules headed by 8.1.1 *sarvasya dve*

B. *PARIBHĀṢĀS*

76. 1.1.3 *iko guṇavṛddhī*
For a substitute (*ādeśa*) ordered with the express mention of the term *vṛddhi* (1.1.1 *vṛddhir ādaic*) or *guṇa* (1.1.2 *adeṅ guṇaḥ*); *iK* (*i, u, ṛ, ḷ*) alone should be treated as substituendum (*sthānin*). However, this *paribhāṣā* is not valid when
    (*a*) the replacement is conditioned by an *ārdhadhātuka* suffix which causes the deletion of part of a root (1.1.4 *na dhātulopa ārdhadhātuke*),
    (*b*) the replacement is conditioned by an affix marked with *K, G, Ṅ* (1.1.5 *kṅiti ca*), or
    (*c*) the replacement refers to the *iK* of *dīdhīṄ* 'to illuminate', *vevīṄ* 'to go, pervade' or *iṬ* (7.2.35 *ārdhadhātukasya*...).
77. 1.1.46 *ādyantau ṭakitau*
A linguistic element marked with *Ṭ* or *K* is introduced as the initial or final element respectively of that for which it is specified.
78. 1.1.47 *mid aco' ntyāt paraḥ*
A linguistic element marked with *M* is introduced after the last vowel of that for which it is specified.
79. 1.1.48 *ec ig hrasvādeśe*
For a short substitute ordered for *eC* (*e, o, ai, au*), *iK* alone should be treated as substitute.

80. 1.1.49 *ṣaṣṭhī sthāneyogā*
    A *ṣaṣṭhī* 'genitive', not otherwise interpretable, denotes the relation 'in place of'.
81. 1.1.50 *sthāne' ntaratamaḥ*
    A substitute (*ādeśa*) must be most similar to its substituendum (*sthānin*).
82. 1.1.51 *uraṇ raparaḥ*
    A substitute of *ṛ* denoted by *aṆ* (*a*, *i*, *u*) is automatically followed by *r*.
83. 1.1.52 *alo' ntyasya*
    A substitute specified for an item in genitive replaces the final sound segment (*aL*).
84. 1.1.53 *ṅic ca*
    A substitute specified for an item in genitive and marked with *Ṅ* also replaces the final sound segment.
85. 1.1.54 *ādeḥ parasya*
    A substitute specified for a following item replaces the initial sound segment.
86. 1.1.55 *anekālśit sarvasya*
    A substitute specified for an item in genitive, consisting of more than one sound segment or marked with *Ś*, replaces the entire substituendum.
87. 1.1.62 *pratyayalope pratyayalakṣaṇam*
    An operation conditioned by an affix applies even if the affix is deleted but not when the operation relates to an *aṅga* (1.4.13 *yasmāt...*) and the deletion is accomplished by *LUK*, *ŚLU*, or *LUP* (1.1.63 *na lumatāṅgasya*).
88. 1.1.66 *tasminn iti nirdiṣṭe pūrvasya*
    An item specified in the locative forms the right context for an operation on what precedes.
89. 1.1.67 *tasmād ity uttarasya*
    An item specified in the ablative forms the left context for an operation on what follows.
90. 1.1.68 *svaṃ rūpaṃ śabdasyāśabdasaṃjñā*
    A linguistic item other than that which is a *saṃjñā* only denotes its form.
91. 1.2.28 *acaś ca*
    Replacements specified by *hrasva* 'short', *dīrgha* 'long' and *pluta* 'extra-long' occur only in place of *aC* 'vowels'.
92. 1.3.10 *yathāsaṃkhyam anudeśaḥ samānām*
    Assignment of equivalents for equal numbers of elements follows the order of enumeration.

8

Some Additional *Paribhāṣās*

The following *paribhāṣās* are not stated explicitly in the *Aṣṭādhyāyī* but implicitly are assumed by the tradition. They are discussed in the *Paribhāṣenduśekhara* of Nāgeśa. The number in the parantheses following the rule is the number which the *paribhāṣā* has in the *PŚ*.

93. *vyākhyānato viśeṣapratipattir nahi sandehād alakṣaṇam* (1)

Proper understanding of a rule is achieved through the explanations of the learned. A rule does not become a non-rule simply because one has doubts. For example, Pāṇini employs *Ṇ* as an *it* twice in the *Śiva-sūtras*. Given an abbreviatory term *aṆ* or *iṆ*, one may ask whether the *Ṇ* is the one given in *Śs* (1) *aiuṆ* or *Śs* (6) *lĀṆ*. Such questions are answered by the explanations of the learned. Here, the answer is: the *Ṇ* of *iN* is that of *Śs* (6) *lĀṆ*, while the *Ṇ* of *aṆ* is that of *Śs* (1), except in rule 1.1.69 *aṇudit savarṇasya*... where it refers to *Śs* (6).

94. *anekāntā anubandhāḥ* (4)

Items termed *it* do not become part of that to which they are attached. Consider rules 1.1.55 *anekāl śit sarvasya* and 5.3.3 *idam iś*. Rule 1.1.55 provides for a substitute to replace its substituendum *in toto* if the substitute either consists of more than one *aL* 'sound segment' or is marked with *Ś*. Rule 5.3.3 introduces *iŚ*, an item marked with *Ś*, as a substitute for *idam*. According to 1.1.55, *iŚ* will replace *idam in toto* since *iŚ* is marked with *Ś*. However, if *Ś* is considered part of *iŚ*, *iŚ* will become an item consisting o more than one *aL*. Consequently, the *anekāl* 'more than one *aL*' condition of 1.1.55 would bring about the total replacement of *idam* by *iŚ*, making the *śit* condition vacuous. Pāṇini's use of *śit* in 1.1.55 becomes an indicato (*jñāpaka*) for the existence of this *paribhāṣā*. That the replacement of *idam* by *iŚ* is accomplished on the basis of *Ś* and not *anekāltva* also shows that *it* are not used as the basis for treating an item as consisting of more than one *aL* (cf. *paribhāṣā* 6: *nānubandhakakṛtam anekāltvam*).

95. *nānubandhakakṛtam asārūpyam* (8)

Items termed *it* are not a basis for a distinction (*bheda*) between forms Rule 3.1.94 *vā' sarūpo' striyām* states that, except for rules contained in th domain headed by 3.3.94 *striyām*..., affixes dissimilar in form optionall are introduced after verb roots as alternatives. Except for affixes in the domain of 3.3.94, all other affixes, if dissimilar in form, will be introduced alternatively. Note that the domain of 3.3.94 is contained within the larger domain of 3.1.91 *dhātoḥ*. Thus, 3.1.96 *tavyattavyānīyaraḥ* introduces *tavyaT*, *tavya* and *anīyaR*. The first two will be considered similar in form since their difference is due to an *it*. However, *anīyaR* obviously will be treated as different in form. Thus, *anīyaR* may be used alternatively with *tavya* and *tavyaT*. Similarly, rule 3.1.133 *ṇvultṛcau* introduces affixes *ṇvuL* and *tṛC* as possible alternatives. Consider also rules 3.2.1 *karmaṇy aṇ* and 3.2.3 *āto' unupasarge kaḥ* whereby *aṆ* and *Ka* are introduced. Rule 3.2.3 is an exception to 3.2.1. If this *paribhāṣā* is not accepted, however, these two affixes will be treated as alternants. In order to facilitate the obligatory blocking by 3.2.3 of 3.2.1, we have to accept that an *it* should not be treated as the basis for distinguishing forms.

96. *ubhayagatir iha bhavati* (10)

In this grammar, a term may be taken as denoting a technical (*kṛtrima*) meaning, a non-technical (*akṛtrima*) meaning or both types of meanings, either at different times or at the same time. Consider rule 1.1.1 *vṛddhir ādaic* where *vṛddhi* is a technical term which denotes *ā*, *ai* and *au*. This term is always interpreted in a technical sense and not in the non-technical sense of 'growth'. Rule 1.1.23 *bahugaṇavatuḍati saṃkhyā* introduces *saṃkhyā*, again a technical term, defined as items such as *bahu* 'many', *gaṇa* 'group' or those which end in affixes *vatU* or *Ḍati*. However, the non-technical meaning of *saṃkhyā*, 'number', is also encountered in the grammar. The context and the desired results determine whether the technical or non-technical sense, or both, should be accepted. Just as in ordinary usage, a word may have different meanings in different contexts. In ordinary usage the word *saindhava* may mean 'horse' or 'salt'; in any one context, however, only one meaning is understood. If the context is food, the meaning is 'salt'; if not, the meaning is 'horse'. In the grammar, if the desired results are obtainable by either interpretation, one should operate with the technical interpretation (cf. *kṛtrimākṛtrimayoḥ kṛtrime kāryasampratyayaḥ*).

The following rules exemplify how context determines whether the technical or non-technical meaning of a term should be understood.

5.1.22 *saṃkhyāyāḥ atiśadantāyāḥ kan* (non-technical meaning of *saṃkhyā*)
1.3.14 *kartari karmavyatihāre* (non-technical meaning of *karma*, i.e. action)
3.1.17 *śabdavairakalahābhrakaṇvameghebhyaḥ karaṇe* (non-technical meaning of *karma*)
7.1.54 *hrasva-nadyāpo nuṭ* (technical meaning of *nadī*)
2.1.20 *nadībhiś ca* (non-technical meaning of *nadī*, i.e., river)

97. *pratyayagrahaṇe yasmāt sa vihitas tadādes tadantasya grahaṇam* (24)

When an affix is used in a rule to specify an operation, the affix denotes a word-form which begins with the base after which the said affix is introduced and extends up to and includes that affix.

Consider 4.4.20 *ktrer mam nityam* which obligatorily introduces the affix *mam*. The item after which *mam* is introduced is specified by affix *Ktri*. According to this *paribhāṣā*, *Ktri* should denote a word-form which begins with the item after which *Ktri* is introduced and should also include and terminate with *Ktri*. Thus, rule 3.3.88 *ḍvitaḥ ktriḥ* introduces the affix *Ktri* to denote either a non-agent participant or *bhāva*. Furthermore, *Ktri* can only be introduced after roots which have *ḌU* as an *it*. Thus, *Ktri* may be introduced after verb roots such as *ḌUpacÃṢ* 'to cook', *ḌUvapÃṢ* 'to sow' or *ḌUkṛÑ* 'to do, make' etc. Rule 3.3.88 *ḍvitaḥ ktriḥ* will thus produce forms such as *pac* + *tri* → *paktri*, *vap* + *tri* → *uptri* and *kṛ* + *tri* → *kṛtri*.

Let us now return to 4.4.20 *ktrer mam nityam* and the present *paribhāṣā*. Affix *ktri* in 4.4.20 refers to the item after which *-mam* should be introduced. According to the present *paribhāṣā*, this item should begin with an item after which *Ktri* is introduced. Such items, according to 3.3.88, may be *pac*, *vap* and *kṛ*. Furthermore, such an item should terminate in *Ktri*.

A question may arise here. Since *-mam* in 4.4.20 is also an affix, should not it refer to an item which begins with that after which *-mam* is introduced and terminates in *mam*? The answer is no, for this *paribhāṣā* does not apply with reference to an affix which is being introduced. This *paribhāṣā* focuses on affixes which have already been introduced, not on affixes such as *-mam* which are about to be introduced (cf. *pratyayagrahaṇe cāpañcamyāḥ*, *paribhāṣā* 26 which the *Mahābhāṣya* cites as a *vārttika*).

98. *uttarapadādhikāre pratyayagrahaṇe na tadantagrahaṇam* (26)

This *paribhāṣā* requires that in the domain of *uttarapada*, i.e. 6.3.1 *alug uttarapade* to 6.3.138 *samprasāraṇasya*, an affix denotes only its own form. An affix in the above domain does not denote a form that terminates with that affix. Consider rule 6.3.42 *gharupakalpa...* which requires that, other things being equal, a polysyllabic word ending in *Ṅī*, i.e. *ī*, is replaced by short *i* when, among other things, the affix *gha* follows. The term *gha* refers to affixes *taraP* and *tamaP*. For proper application of 6.3.42, *gha* should only refer to *taraP* and *tamaP* and not to items ending in these affixes. For example, the *ī* of *gaurītarā* and *gaurītamā* will be shortened before *taraP* and *tamaP* to produce *gauritarā* and *gauritamā*. However, if one interprets *gha* as referring to the enitre item which ends in *gha*, as is the case in the previous *paribhāṣā*, forms such as *kumārīgaurītarā* and *kumārīgaurītamā* would be subject to short *i* replacement for the long *ī* of *kumārī* under the condition of *gaurītarā* and *gaurītamā*, forms ending in *taraP* and *tamaP*. This will produce undesired results. The short *i* replacement applies only to the *ī* of *gaurī*, not to the *ī* of *kumārī* in *kumārīgaurītarā* or *kumārīgaurītamā*.

99. *saṃjñāvidhau pratyayagrahaṇe tadantagrahaṇaṃ nāsti* (28)

An affix does not refer to an item which ends in it when it is used in a rule that defines a term. Consider 1.1.21 *taraptamapau ghaḥ* which defines the term *gha* as affixes *taraP* and *tamaP*. According to this *paribhāṣā*, *taraP* and *tamaP* should not refer to items such as *gaurītarā* and *gaurītamā* which end in them. This too is a negation of what was provided by *paribhāṣā* 97.

100. *vyapadeśivad ekasmin* (31)

That which applies to the central denotatum of an item may also apply to a single item. *Vyapadeśī* in this *paribhāṣā* refers to proper signification or central denotatum. Consider the word *jyeṣṭhaḥ* 'oldest' in *ayaṃ me jyeṣṭhaḥ putraḥ* 'this is my oldest son'. What if a person has only one son? Would he say *ayaṃ me jyeṣṭhaḥ*? Normally not; but he could say *ayaṃ me jyeṣṭhaḥ, ayam eva me kaniṣṭhaḥ* 'this is my oldest as well as my youngest son'. Here, for certain purposes, an only son is being treated as both oldest and youngest. Similar events occur in the grammar. For example, 6.1.1 *ekāco dve prathamasya* requires doubling of the part of a root constituted by the first of its vowels. This doubling is possible in cases such as *jāgṛ* where *jā* is the form constituted by the first vowel. Consider, however, roots such as *pac* where the root has only one vowel. This *paribhāṣā* will, for purposes such as doubling, allow the *a* of *pac* to be treated as the first vowel. Consequently, the form *pa* constituted by the first vowel may be doubled.

101. *yasmin vidhis tadādāv algrahaṇe* (34)

A sound segment used as a qualifier in the locative to specify an operation, requires that the qualified be interpreted as beginning with that sound segment. Consider rule 6.1.79 *vānto yi pratyaye* read with the *anuvṛtti* of *ecaḥ*, the genitive singular of *eC*, from rule 6.1.78 *eco'yavāyāvaḥ*. In the absence of this *paribhāṣā yi*, the sound segment *y* used in the locative as a qualifier to *pratyaye*, will be interpreted as referring to that which ends in *y*. This interpretation which stems from 1.1.72 *yena vidhis tadantasya* will interpret rule 6.1.79 as follows: a replacement ending in *v*, i.e. *av*, *āv*, comes in place of *eC* when an affix ending in *y* follows. This rule will be vacuous because there is no affix which ends in *y*. Consequently, *yi* should not be interpreted in view of 1.1.72. Instead it should be interpreted as 'when (an affix) which begins with *y* follows'. Rule 6.1.79 can thus be interpreted properly as: a replacement in *v* comes in place of *eC* when an affix beginning with *y* follows.

Now consider rule 7.2.58 *gamer iṭ parasmaipadeṣu* which has the *anuvṛtti* of *se*, the locative singular of *s*, and *ārdhadhātukasya*. This rule introduces the augment *iṬ* to an *ārdhadhātuka* affix when it occurs after *gam* 'to go' and is followed by an affix termed *parasmaipada*. The *ārdhadhātuka* affix which receives the augment *iṬ* is qualified by *se*. Again, in view of rule 1.1.72, *se*, could be interpreted as 'that which ends in *s*'. Rule 7.2.58 would then be able to introduce *iṬ* only when an *ārdhadhātuka* affix terminating in *s* occurs after *gam* and is followed by a *parasmaipada* affix. This will block the derivation of *gamiṣyati* 'he will go' where the *ārdhadhātuka* (3.4.114 *ārdhadhātukaṃ śeṣaḥ*) affix after *gam* is *sya* (3.1.33 *syatāṣī*...). By accepting this *paribhāṣā*, *sya* can receive the augment *iṬ* because it is an *ārdhadhātuka* affix beginning with *s*.

102. *ekadeśavikṛtam ananyavat* (38)

Even when modification (*vikāra*) occurs to part of an item that item is still treated as what it was. This *paribhāṣā* is also supported by *lokanyāya* 'norm in the outside world'. As a dog who loses its tail still is treated as a dog, so does a form receive the same treatment even though it has lost part of itself or undergone some modification. Consider *abhavat* 'he became' and *bhavatu* 'may he become' where *abhavat*, a form terminating in *ti*, has lost its final *i*, and *bhavatu*, again a form terminating in *ti*, has had its final *i* replaced by *u*. Rule 1.4.14 *suptiṅantaṃ padam* requires that the term *pada* should be assigned only to those items which end in a *sUP* or *tiṄ*. However, *abhavat* ends in *t* and *bhavatu* ends in *tu*. The original *ti* which qualified *abhavat* and *bhavatu* as *padas* has been modified. In the absence of this *paribhāṣā*, the above two items cannot be termed *padas*. It should be remembered in this connection that this *paribhāṣā* does not apply when the modified part of an item conditions an operation, or the modification is excessive.

103. *pūrvaparanityāntaraṅgāpavādānām uttarottara balīyaḥ* (39)

This *paribhāṣā* decides the comparative strength of *pūrva* 'prior', *para* 'subsequent', *nitya* 'obligatory', *anitya* 'non-obligatory', *antaraṅga* 'internally conditioned', *bahiraṅga* 'externally conditioned' and *apavāda* 'exception' rules. In short, a subsequent rule is more powerful than a prior rule, an obligatory rule more powerful than a subsequent rule, an internally conditioned rule more powerful than a subsequent or obligatory rule, and an exception more powerful than a subsequent, obligatory or internally conditioned rule. (The relationships existing among these rules are illustrated in detail on pages 85-87.)

104. *punaḥ prasaṅgavijñānād bhavati* (40), and
105. *sakṛd gatau vipratīṣedhe yad bādhitaṃ tad bādhitam eva* (41)

These two *paribhāṣās* relate to the scope of 1.4.2 *vipratiṣedhe paraṃ kāryam*. This rule states that when there is a conflict (*vipratiṣedha*) in the application of two rules, the one subsequent in order should apply. *Vipratiṣedha* is defined in two ways:

(*a*) *tulyabalatā* 'conflict created by two rules of equal strength', and
(*b*) *asambhava* 'impossible application of two rules simultaneously'.

The expression *paraṃ kāryam* also is interpreted in two ways:

(*c*) only the subsequent should apply, and
(*d*) apply the subsequent.

Interpretation (*c*) makes the ruling of 1.4.2 restrictive (*niyama*) whereas interpretation (*d*) makes it operational (*vidhi*).

Paribhāṣā 104 relates to the *asambhava* interpretation of *vipratiṣedha*. If (*b*), the *asambhava* interpretation is accepted, then, after a subsequent rule has been applied, the prior rule which had been blocked may also apply, should there be an occasion for it. As opposed to this, *paribhāṣā* 105 relates to the *tulyabalatā* interpretation of *vipratiṣedha* which, since it goes hand in hand with the restrictive interpretation of *paraṃ kāryam*, yields an interpretation of 1.4.2 whereby a subsequent rule blocks the application of a prior rule permanently. If *vipratiṣedha* is of the *tulyabalatā* type, a prior rule once blocked by a subsequent rule remains blocked forever.

Now consider some examples. Rule 2.2.32 *dvandve ghi* states that an item termed *ghi* (1.4.7 *śeṣo ghy asakhi*) is named *upasarjana* 'secondary' and is placed first in a *dvandva* compound. Rule 2.2.33 *ajādy antam* states that a constituent which begins with an *aC* and terminates in *a* also is placed first in a *dvandva* compound. Given the analysed form (*vigrahavākya*) *agniś ca indraś ca* 'Indra and Agni' which is parallel to the compound *indrāgni*, *agni* will be termed *ghi* by 1.4.7 and in view of rule 2.2.32 should be placed first. The resulting compound would be **agnīndrau*. In view of rule 2.2.33, *indra* should be placed first since it begins with an *aC* and ends in *a*. This conflict can be resolved only by invoking 1.4.2. The *vipratiṣedha* here is *tulyabalatā*.

Another example of *tulyabalatā* conflict is found in the derivation of *tisṛṇām* 'of the three' where, given the string *tri* + *ām*, two rules apply. Rule 6.3.48 *tres trayaḥ* requires that *tri* be replaced by *trayas*. Rule 7.2.99 requires that *tri* be replaced by *tisṛ*. These rules are equal in strength. By invoking 1.4.2, *tri* is replaced by *tisṛ* to yield *tisṛ* + *ām* → *tisṛṇām*. Now if, by invoking 1.1.56 *sthānivad ādeśo' nalvidhau*, we take *tisṛ* as *tri*, rule 6.3.48 again may find scope of application. Since the *vipratiṣedha* here involves *tulyabalatā*, however, 6.3.48 will remain blocked forever. This is what *sakṛd gatau...*, the second *paribhāṣā*, accomplishes.

Let us now consider some examples where *vipratiṣedha* is interpreted as *asambhava*. Consider rule 3.1.133 *ṇvultṛcau* which introduces affixes *ṆvuL* and *tṛC* after verb roots. The conflict concerns whether both affixes should be introduced simultaneously or in turn. Since a simultaneous application is impossible, *ṆvuL* and *tṛC* will be introduced in turn.

Similarly, given the string *ajara* + *Jas,* where 7.1.20 *jaśśasoḥ śiḥ* applies to replace *Jas* by *Si, ajara* + (*Jas* → *Śi*) = *ajara* + *i,* two rules become applicable: 7.1.72 *napuṃsakasya jhal acaḥ* and 7.2.101 *jarāyā jaras anyatarasyām.* Now the question arises whether we should apply 7.1.72 or 7.2.101. If one prefers to apply 7.1.72, the result will be **ajara* + *nUM* + *i.* Applying 7.2.101 creates a different problem. This rule requires the replacing of *jara* by *jaras* provided the *aṅga* is followed by an affix beginning with *aC.* If one considers *ajara* as the *aṅga,* the *n* of *nUM* will intervene before the *i,* the affix beginning with *aC.* Thus 7.2.101 will be blocked from application. However, one can also argue that *ajara* + *n* should be treated as the *aṅga* since *n* happens to be part of it, that is, because *jara* is part of the *aṅga* and *n* is part of the *aṅga* (*avayavāvayava*). This reasoning will permit the application of 7.2.101 with the problematical result: **a* (*jara* → *jaras*) + *n* + *i* → *ajarasn* + *i* = **ajarasni.* The real problem with this approach, however, is the application of rule 6.4.10 *sānta mahataḥ saṃyogasya* which requires the lengthening of the penultimate vowel of the *aṅga* ending in *s* preceded by *n.* Given the string **ajarasni,* the combination is not *ns* but *sn* which will not permit 6.4.10 to apply. Wrong form such as **ajarasni* will result. Therefore, in order to facilitate the application of 6.4.10, 7.2.101 must replace *jara* by *jaras* before 7.1.72 introduces *nUM.* This is possible only when one invokes 1.4.2 *vipratiṣedhe...* The conflict between the application of rules 7.2.101 and 7.1.72 is that of *asambhava* and hence 7.1.72 may reapply, in view of *paribhāṣā* 104.

106. *asiddhaṃ bahiraṅgamantaraṅge* (51)

The mark for this *paribhāṣā* is *antaraṅgatva* 'internal conditioning'. It is present in every situation where the cause or condition (*aṅga*) for applying a rule or performing an operation is internally conditioned. This *paribhāṣā* enables an internally conditioned rule or operation to render an externally conditioned rule or operation suspended (*asiddha*). It should be noted that the status of internal and external conditioning is determined on the basis of forms (*śabda*) and not meaning (*artha*). It should be noted further that this *paribhāṣā* applies only in the *sapādasaptādhyāyī* 'the first seven books plus the first quarter of book eight'; it does not apply to rules within the last three quarters of book eight. Finally, this *paribhāṣā* applies in relation to both types of *bahiraṅga* operations: *jātabahiraṅga* and *samakālikabahiraṅga.* In other words, an internally conditioned rule or operation suspends an externally conditioned operation whether the externally conditioned operation has already taken place or is about to occur.

Since this *paribhāṣā* depends on the relative internal and external conditioning of causes with reference to a form, it clearly requires a string of formal elements as locus. Let us consider the derivation of *syona* 'sun, ray of light' which serves as the most celebrated example for this *paribhāṣā* in the commentaries. This word is derived by introducing *Uṇādi* affix *na* after the verbal root *siv* 'to sew'. Furthermore, there is also a provision in *Uṇādi* 3.9 *siveṣṭer yū ca* whereby the *iv* of *siv* is replaced by *yū*. Thus, we get *s* (*iv* → *yū*) + *na* = *syūna*. However, since *Uṇādi* affixes apply variously—sometimes they do apply and sometimes they don't—commentators claim that, in the derivation of *syona*, *na* alone should be introduced. The concurrent replacement of *iv* by *yū* should not apply. This will yield the string *siv* + *na* to which 6.4.19 *cchvoḥ śūḍ anunāsike* applies to yield *si* (*v* → *ū*) + *na* = *siū* + *na*. Rules 6.1.77 *iko yaṇ aci* and 7.3.86 *pugantalaghūpadhasya ca* now become applicable to *siū* + *na*. Rule 7.3.86 will require that *i* of *siū* be replaced by the *guṇa* vowel *e* under the condition of *siū* being an *aṅga* before affix *na*. Thus, *na* conditions this *guṇa* replacement. Rule 6.1.77 would require that the *i* of *siū* + *na* be replaced by *y* before *ū*. The *guṇa* operation is *bahiraṅga*; its cause, the affix *na*, is external. However, the cause of the *y* replacement, *ū*, is internal, within *siū*. According to this *paribhāṣā*, the internally conditioned *y* replacement will take place. This will yield *s* (*i* → *y*)*ū* + *na* = *syū* + *na*. The final *ū* of *syū* will then be replaced by *o* to yield *syona* (cf. 7.3.84 *sārvadhātukārdhadhātukayoḥ*).

Cardona (unpublished (b)) approaches this *paribhāṣā* with a much deeper and wider orientation. Here are three examples from the *Mahābhāṣya* which Cardona also discusses.

(1) *śuśuvuḥ* 'they swelled' is derived from *śvi* + *LIṬ* where *us* is a replacement of *jhi* (3.4.77 *tiptas*... and 3.4.81 *liṭaḥ*...). Given the string *śvi* + *us*, rule 6.1.30 *vibhāṣā śveḥ* optionally applies to yield *ś*(*v* → *u*)*i* + *us*. Two rules now become applicable: 6.1.108 *samprasāraṇāc ca* and 6.4.82 *er anekāco saṃyogapūrvāc ca*. The first rule requires that the sequence of a *samprasāraṇa* vowel followed by another vowel, i.e. *u* + *i*, of *sui* + *us*, be replaced by *u*. This will produce the string *s*(*u* + *i* → *u*) + *us* = *su* + *us*. Rule 6.4.82 requires that the *i* of *sui* be replaced by *y*. This *y* replacement is *bahiraṅga* in the sense that its condition, *u*, is contained in *us* and not in *sui*. As opposed to this, the single replacement *u* has its condition internally. The *samprasāraṇa* vowel *u* which forms the condition for the replacement is contained within *sui*. Consequently, the internally conditioned replacement by *u* prevails. The externally conditioned application would have resulted in the derivation of a wrong form **suy* + *us*.

(2) *juhuvuḥ* 'they called' is derived from *hvā* + *us* where after the *samprasāraṇa*, the string becomes *h*(*v* → *u*)*ā* + *us* → *huā* + *us*. Here again, two rules become applicable: 6.4.64 *āto lopa iṭi ca* and 6.1.108 *samprasāraṇāc ca*. Rule 6.4.64 requires that the final *ā* of *huā* be dropped before the affix *us*. This zero replacement of *ā* clearly is externally conditioned. As a result, 6.1.108 applies to yield *h*(*uā* → *u*) + *us* = *hu* + *us*.

(3) *dhiyati* 'he holds or maintains...' is derived from *dhi* + *Śa* + *ti* = *dhi* + *a* + *ti* where two rules become applicable: 6.4.77 *aci śnudhātubhruvāṃ*

yvoriyaṅuvaṅau and 7.3.86 *pugantalaghūpadhasya ca.* The application of 6.4.77 would yield the form *dh(i → iy) + a + ti* where the root final *i* is replaced by *iy* under the condition of the following *a.* Applying the second rule would result in *dh(i → e) + a + ti* where the condition of application will be *ti* which is external. Since the condition for the application of 6.4.77, the following *a,* is internal, 6.4.77 is applied. Rule 7.3.86 would have yielded the wrong form *dh(i → e → ay) + a + ti = *dhayati.*

107. *purastāpavādā anantarān vidhīn bādhante nottarān* (60)

This *paribhāṣā* states that a prior exception blocks only the most immediately following rule and not any later rules. An exception rule may be either *niravakāśāpavāda,* a rule which is left without any scope of application unless it blocks a rule or *viśeṣāpavāda,* a rule which carves out its scope of application within the scope of a general rule. There is a basic difference between these two types. A *nirvakāśa* exception blocks a general rule in the sense that it applies first. After its application, if the general rule still finds its scope, it too may apply. Thus *niravakāśa* rules entail temporary blocking. A *viśeṣa* exception, however, blocks the application of a general rule forever. The reason for this total and permanent blocking is that a particular (*viśeṣa*) rule carves out its domain from within the domain of a general (*utsarga*) rule. A *viśeṣa* rule only obtains within the domain of a general rule. Its validity is based entirely on blocking the general rule. Thus, the general rule, is blocked forever by the particular exception.

Commentators cite two maxims in connection with blocking of *utsarga* by *viśeṣa.* The first maxim was evolved by the grammarians themselves. It states that *y* blocks *x* if *y* obtains only after *x* has obtained (*yenā' prāpte yo vidhir ārabhyate sa tasya bādhako bhavati*). The other maxim derives from common practice. It is called *takra-kauṇḍinya nyāya.* When someone commands someone else by *brāhmaṇebhyo dadhi dīyatāṃ takraṃ kauṇḍinyāya* 'give *dadhi* (yoghurt) to the *brāhmaṇas* and *takra* (buttermilk) to Kauṇḍinya', one understands that *dadhidāna* 'the giving of yoghurt' is a general operation in relation to which *takradāna* 'the giving of buttermilk' is particular. However Kauṇḍinya, who is supposed to receive buttermilk, is also a *brāhmaṇa.* Thus, *takradāna* (*y*) obtains within the scope of *dadhidāna* (*x*). By being a *brāhmaṇa,* Kauṇḍinya is entitled to receive the general *dadhidāna.* However, by reason of being Kauṇḍinya, a particular *brāhmaṇa,* he is only entitled to receive *takra.* If he receives *takra* and then is given *dadhi,* this particular injunction will become meaningless. As a result, *takradāna* will block *dadhidāna* permanently.

Let us look at an example. Consider 6.1.1 *ekāco dve prathamasya* and 6.1.2 *ajāder dvitīyasya.* The first rule requires that the unit formed with the first vowel of a rule be doubled. This is a general rule to which 6.1.2 is an exception. Rule 6.1.2 requires that if the root begins with a vowel, the unit formed by its second vowel be doubled. Rule 6.1.1 obtains on roots in general whereas 6.1.2 obtains on a particular set of roots. Rule 6.1.2 thus carves out its domain from within the general domain of 6.1.1. Consequently, 6.1.2 will block 6.1.1 permanently.

Now let us consider a *niravakāśa* exception. Given the string *ramā* + *Ṅi* where *ramā* terminates in the feminine affix *āP* and *Ṅi* is locative singular, two rules apply. Rule 7.3.116 *ṅer ām nadyām nīyaḥ* requires that *Ṅi* be replaced by *ām*. Rule 7.3.113 *yāḍ āpaḥ* requires that *Ṅi* should receive the augment *yāṬ*. Rule 7.1.113 will yield the string *ramā* + *yā* + *Ṅi*. This will make the application of 7.3.116 impossible because the locus of replacement by *ām* is no longer *Ṅi*. Instead, it is *yāṬṄi*. Rule 7.3.116 will be without any scope of application. It is for this reason that 7.3.116 blocks 7.3.113 and the result is *ramā* + *ām*. However, as stated above, a *niravakāśa* exception blocks a general rule only temporarily and should there be a situation under which the general rule may apply, it may do so. Rule 7.3.113 does apply to introduce *yāṬ* after 7.3.116 has applied. In this case, *ām* is treated as though it were *Ṅi*. Thus 7.3.116 does not permanently block 7.3.113.

108. *madhye'pavādāḥ pūrvān vidhīn bādhante nottarān* (61)

An exception read in between rules blocks only the provision of a prior rule. Consider the following rules: 4.1.54 *svāṅgāc copasarjanād asaṃyogopadhāt*, 4.1.55 *nāsikodaroṣṭhajaṅghādantakarṇaśṛṅgāc ca*, 4.1.56 *na kroḍādi bahvacaḥ* and 4.1.57 *sahanañvidyamānapūrvāc ca*. Rule 4.1.54 is a general rule. It states that a feminine affix *NīṢ* optionally may be introduced after a nominal stem which (*a*) ends in *a*, (*b*) is termed an *upasarjana* 'secondary constituent of a compound', (*c*) does not have a conjunct in the *upadhā* 'penultimate position'; and (*d*) has *svāṅga* 'one's own limb' as its denotatum. Rule 4.1.55 cites specific stems such as *nāsikā* 'nose', *udara* 'belly', *oṣṭha* 'lips', *jaṅghā* 'thigh', *danta* 'tooth', *karṇa* 'ear' and *śṛṅga* 'horn' after which *ṄīṢ* may be introduced. Note here that this list contains items such as *danta*, *karṇa*, *jaṅghā* and *śṛṅga* which contain penultimate conjuncts. Furthermore, condition (*a*) of 4.1.54 is dropped in case of 4.1.55. Thus, 4.1.55 is an exception to conditions (*a*) and (*c*) of 4.1.54.

Now consider rules 4.1.56 and 4.1.57. These are negation rules. The first rule negates an optional *ṄīṢ* when the stem either belongs to the list headed by *kroḍa* 'lap' or contains more than two vowels and ends in *a*. Note in this connection that 4.1.55 contains items such as *udara* which would not be permitted to take the optional *ṄīṢ* under 4.1.56. Rule 4.1.57 negates *ṄīṢ* when *saha* 'with' or *naÑ* 'not' form the initial constituent of the stem. Patañjali discusses the negations provided by 4.1.56-57 under rule 4.1.55. Two types of items are given there: polysyllabic items such as *udara* and those with a conjunct in the *upadhā* such as *danta*. The negation given by

4.1.56-57 also is twofold: one marked by polysyllables and the other marked with *saha* and *naÑ*. Rule 4.1.55 will be able to block the polysyllabic negation in case of items such as *udara* or *nāsikā*, but it cannot block the negation of *saha* and *naÑ* offered by 4.1.57. This will be made possible by treating 4.1.55 as the prior exception to 4.1.56 and accordingly, the prior exception 4.1.55, can block only the most immediately available rule, 4.1.56. Thus we will get examples such as *tilodarā* (*ṬāP*)/*tilodarī* (*ṄīṢ*) 'she on whose abdomen are marks like sesame'. Since 4.1.55 cannot block the negation of 4.1.57, however, we get only *anāsikā* (*ṬāP*) 'she who does not have a nose' and not **anāsikī* (*ṄīṢ*).

Let us now consider examples of 4.1.55 which contain conjuncts. As above, we again find two negations: one marked with a conjunct in *upadhā*, the other with *saha* or *naÑ*. Rule 4.1.56 is an exception placed in the middle. As such according to *paribhāṣā* 108, it can block only the provision of 4.1.55 but not of 4.1.57. Consider two examples: *cārukarṇī* and *cārukarṇā* 'she who has beautiful ears'. Rule 4.1.54 does not allow *ṄīṢ* to items having a penultimate conjunct. Rule 4.1.55 blocks this exception and optionally provides for *ṄīṢ*. However, since 4.1.56 is an exception placed in the middle, it cannot block the negation marked with *saha* or *naÑ*. This is the reason why in an example like *vidyamānadantā* 'she whose teeth are intact', the negation provided by 4.1.57 prevails and the optional *ṄīṢ* of 4.1.55 is blocked . Had this not been the case **vidyamānadantī*, a wrong form, would have resulted.

109. *anantarasya vidhir bhavati pratiṣedho vā* (62)

When a rule makes or negates a provision, its provision or negation relates to that which is most immediate. Consider the following rules. 3.4.87 *ser hy apic ca* orders a *hi* replacement of a *siP* replacement of *LOṬ* which is to be treated as *apit*, not marked with *P* and 3.4.88 *vāc chandasi* orders a *hi* replacement of *siP* which, in turn, is a replacement of *LOṬ* and optionally is treated as *apit*. Rule 3.4.87 provides for two things: *hi* as a replacement of *siP* and *hi* to be treated as *apit*. Without this second provision, *hi*, since it is a replacement of *siP*, an item marked with *P*, would have been treated as though marked by *P* itself (1.1.56 *sthānivad*...). The question is whether 3.4.88 makes both provisions of 3.4.87 optional or only one. Are the *hi* replacement and its *apit* status both optional or only the *apit* status? According to *paribhāṣā* 108, *hi* is not optional because *apit* is the most immediate provision available to 3.4.88.

Consider the negation provided by 7.2.4 *neṭi*. This rule negates the provision of *vṛddhi* of an *aṅga* (1.4.13 *yasmāt*...) which is either constituted by *vadĀ* 'to speak', *vrajĀ* 'to wander', or terminates in a consonant. The right context for this *vṛddhi* is the *parasmaipada* affix *sĪC*. Thus we get examples such as *avrājīt* 'he wandered away' and *avādīt* 'he spoke'. Rule 7.2.4 does not allow *vṛddhi* for those *aṅgas* which terminate in a consonant where the right context is *sIC* with initial augment *iṬ*. Thus, there is no *vṛddhi* in *amoṣīt* 'he stole' or *asevīt* 'he served'. Both rules 7.2.1 *sici vṛddhiḥ parasmaipadeṣu* and 7.2.114 *mṛjer vṛddhiḥ* also provide for *vṛddhi*. Rule 7.2.4 can only negate the *vṛddhi* provision with reference to 7.2.3. It cannot negate the provisions of 7.2.1 or 7.2.114 as these rules are not most immediate to it. The commentators consider this *paribhāṣā* more powerful than 108.

110. *ubhayanirdeśe pañcamīnirdeśo balīyaḥ* (71)

If there is a conflict between operations specified by *saptamī* 'locative' and *pañcamī* 'ablative', the one specified by *pañcamī* prevails. Consider the interpretation of rule 8.3.32 *ṅamo hrasvād aci ṅamuṇ nityam* where *ṅamaḥ* is in the ablative and *aci* is in the locative. This rule introduces augments *ṅŨṬ*, *ṇŨṬ*, and *nŨṬ* to items specified by *pañcamī* and *saptamī*. If one takes the locative interpretation, then, in view of 1.1.66 *tasminn iti...*, the augments will be introduced to that *ṅAM* (*ṅ, ṇ, n,*) which is immediately followed by *aC*. According to the ablative interpretation, however, the augments will be introduced to the *aC* which comes immediately after (1.1.67 *tasmād ity uttarasya*) the *ṅAM*. Consider *kurvan āste* 'he is engaged in doing or making', where *kurvan* is a *pada* ending in *n* which, in turn, occurs before the *ā* of *āste*. Furthermore, the *n* of *kurvan* occurs after a short *a* (*hrasvāt*). According to the locative interpretation, *n* (*nŨṬ*) will be introduced to the *n* of *kurvan*. This will yield *kurva* + *n* + *n* + *āste* = *kurvann āste*. An ablative interpretation will introduce the *n* to the *ā* of *āste* with the result being **kurvan* + *nāste*.

However, a problem still remains with the locative interpretation. Rule 8.4.37 *padāntasya* negates the replacement of the final *n* of a *pada* by *ṇ*. If the *n* of 8.2.32 is introduced to *kurvan*, its final *n* cannot be saved from being replaced by *ṇ*. Rule 8.4.37 cannot block this replacement. If, however, the *n* is introduced to *ā*, *kurvan* can save its *n* from being replaced by *ṇ*. For this reason, the ablative interpretation prevails.

The locative of *aci* also is intended for the subsequent rule 8.2.33 *may uño vo vā*. In the absence of an ablative interpretation, the ablative of *ṅamaḥ* will be without scope (*niravakāśa*). This *niravakāśatva* favours the ablative interpretation. However, consider rule 8.2.29 *ṅaḥ si dhuṭ* where *ṅaḥ* (ablative) and *si* (locative) both will be without any scope elsewhere. Here again, the ablative interpretation will prevail, although for a different reason. Rule 1.1.67 *tasmād...* is subsequent to 1.1.66 *tasminn...* and hence, according to 1.4.2 *vipratiṣedhe...*, the subsequent rule will prevail.

What if both the locative and ablative used in a rule find their scope elsewhere? Such an example is 7.1.52 *āmi sarvanāmnaḥ suṭ* where *āt* (ablative) has its scope in 7.1.50 *āj jaser suk* from whence it is carried and *āmi* has its scope in 7.1.53 *tres trayaḥ*. Here again 1.4.2 will be invoked and an ablative interpretation will prevail.

111. *sūtre liṅgavacanam atantram* (74)

Gender and number specific to a rule should not be treated as absolute. When Pāṇini uses a particular item in a particular gender and number, the reference of that item should not be treated as limited to that particular number and gender. Consider 4.1.92 *tasyāpatyam* where *tasya* is singular and *apatyam* is neuter. Since *apatyam* is neuter, if one applies 4.1.105 *gargādibhyo yañ* which carries the *anuvṛtti* of 4.1.92, one would only get **gārgyam* 'offspring of Garga' and not *gārgyaḥ* 'male offspring of Garga'. The masculine *gārgyaḥ* would be ruled out. Similarly, on the basis of a singular in *tasya*, one could not get the dual *gārgyau. Paribhāṣā* 110 legitimizes these other forms. As a result, *tasya* does not just refer to the singular and *apatyam* is not strictly limited to neuter.

The existence of this *paribhāṣā* is indicated by rules 2.2.2 *ardhaṃ napuṃsakam* and 1.4.1 *ā kaḍārād ekā saṃjñā*. In 2.2.2, if Pāṇini had intended only the neuter gender, he need not have explicitly used *napuṃsakam*. The neuter idea would have been carried by *ardham* itself. Hence, on the strength of the explicit use of *napuṃsakam* one concludes that a gender in a rule does not become absolute. Similarly, the explicit mention of *ekā* in 1.4.1 indicates that number is also not absolute. The singular, if it had been intended to be absolute, automatically could have been conveyed by the use in the singular of *pada, bha* and *aṅga* terms.

112. *saṃniyogaśiṣṭānām antarāpāye ubhayor apy apāyaḥ* (112)

Whenever a rule introduces two things concurrently, if one is removed then the other also is removed. Recall the derivation of *pañcendraḥ* 'a *mantra* whose deities are five *Indrāṇīs*' where *pañcan* + *Jas* and *indrāṇī* + *Jas* are combined in a *dvigu* compound by rule 2.1.51 *taddhitārthottara*.... The compound *pañcendrāṇī* results from the deletion of the *Jas* and *n* of *pañcan* and the replacement of the *a* of *pañca* and the *i* of *indrāṇī* with a single *guṇa* substitute. After *pañcendrāṇī*, rule 4.2.24 *sāsya devatā* introduces *aṆ* which later is deleted by 4.1.88 *dvigor lug anapatye*. Then rule 1.2.49 *luk taddhita luki* demanding the deletion of the feminine affix *ṄīP* occurring after *indrāṇī* is applied. This affix was introduced after *indra* by rule 4.1.49 *indravaruṇa*.... In addition, this same rule concurrently introduced the augment *ānUK* to *indra*. Since *ānUK* is marked with *K*, it is introduced at the end of *indra* (cf. 1.1.46 *ādyantau ṭakitau*). Thus, we find *indra* + *ānUK* + *ṄīP* = *indra* + *ān* + *ī* = *indrāṇī*.

When rule 1.2.49 applies deleting the *ṄīP* of *pañcendrāṇī paribhāṣā* 112 intervenes as *ṄīP* and *ānUK* were introduced concurrently. As a result, when *ṄīP* is deleted, *ānUK* must also be deleted. Thus, *pañcendr*(*ān* → ∅)(*ī* → ∅) = *pañcendra*. Note that the final *a* of *indra* was there when *ānUK* and *ṄīP* were introduced; therefore, it will be restored when they are removed.

113. *tanmadhyapatitas tadgrahaṇena gṛhyate* (96)

A given form can also represent its derivates provided that what is introduced in the derivation is contained within that form. For example, forms such as *sarvaka* 'all, entire', and *uccakaiḥ* 'high' are derived by introducing an affix *akÃC* after *sarva*, a pronoun, and *uccaiḥ*, an indeclinable (5.3.71 *avyayasarvanāmnām akac prāk ṭeḥ*). This affix is introduced before the *ṭi* (1.1.64 *acȯ' ntyādi ṭi*; that part of an item beginning with its last vowel) of an item. Consequently, *sarv* + *akÃC* + *a* = *sarvaka* and *ucc* + *akÃC* + *aiḥ* = *uccakaiḥ*.

Now, consider rules 1.1.27 *sarvādīni sarvanāmāni,* and 1.1.37 *svarādinipātam avyayam,* which defines the term *avyaya*. Rule 1.1.27 assigns the term *sarvanāman* to those forms enumerated in the list headed by *sarva* 'all'. Similarly, 1.1.37 assigns the term *avyaya* to those forms which are either enumerated in the list headed by *svar* 'heaven' or are termed *nipāta*. Since *sarvaka* and *uccakaiḥ* are items which are not covered by the scope of rules 1.1.27 and 1.1.43, *sarvaka* cannot be assigned the term *sarvanāman* and *uccakaiḥ* cannot be called an *avyaya*. However, in the absence of the assignments of these terms, operations specific to *sarvanāman* and *avyaya* cannot be performed. For example, *sarvake,* the nominative plural of *sarvaka*, as well as *sarvakasmai* and *sarvakasmāt*, the dative and ablative singulars, cannot be derived in a manner parallel to the derivation of *sarve*, *sarvasmai*, and *sarvasmāt*. Similarly, a *sUP* introduced after *uccakaiḥ* cannot be deleted in the absence of the assignment of the term *avyaya*.

It is to remove these difficulties that this *paribhāṣā* enables *sarva* and *uccaiḥ* to represent *sarvaka* and *uccakaiḥ* as well, on the grounds that *akÃC* is contained within *sarva* and *uccaiḥ*.

114. *upapadavibhakteḥ karakavibhaktir balīyasī* (103)

A nominal ending specified with reference to a *kāraka* is more powerful than one specified with reference to an *upapada* 'co-occurring *pada*'. Consider rules 2.3.2 *karmapravacanīyayukte dvitīyā* and 2.3.28 *apādāne pañcamī*. Rule 2.3.2 introduces *dvitīyā* 'accusative singular' after a nominal stem co-occurring with an item termed *karmapravacanīya*. Rule 2.3.28 introduces *pañcamī* 'ablative singular' after a nominal stem when the ablative (*apādāna*) is to be denoted. Now consider the sentence *kuto' dhyāgacchati* 'where is he coming from' where *kutaḥ* is in the ablative. By 1.4.93 *adhiparī anarthakau, adhi* of *adhyāgacchati* may be termed a *karmapravacanīya*. Since *kim* of *kutaḥ* co-occurs with *adhi*, a *karmapravacanīya*, according to rule 2.3.2, *kim* should take *dvitīyā*, the accusative. Instead, since this *paribhāṣā* favours a nominal ending specific to a *kāraka* rather than one which is specific to a co-occurring item, *kim* is introduced with *pañcamī* by rule 2.3.28.

9

Kāraka and *Vibhakti*

The following is a controlled listing of the domain of Pāṇini's *kārakas*.

1.4.1 *ā kaḍārād ekā saṃjñā*

'only one term is to be assigned prior to *kaḍāra* (2.3.38 *kaḍārāḥ karmadhāraye*)'

1.4.2 *vipratiṣedhe paraṃ kāryam*

'the subsequent (*para*) is to be applied when there is conflict between two rules of equal strength'

1.4.23 *kārake*

'the *kāraka*...'

1.4.24 *dhruvam apāye' pādanam*

'a *kāraka* which is fixed (*dhruva*) when movement away (*apāya*) is denoted is termed *apādāna* (ablative)'

1.4.32 *karmaṇā yam abhipraiti sa sampradānam*

'a *kāraka* which the agent wishes to reach through the object is termed *sampradāna* (dative)'

1.4.42 *sādhakatamaṃ karaṇam*

'a *kāraka* which is most instrumental in bringing an action to accomplishment is termed *karaṇa* (instrument)'

1.4.44 *ādhāro' dhikaraṇam*

'a *kāraka* which serves as locus (*ādhāra*) is termed *adhikaraṇa*'

1.4.49 *kartur īpsitatamaṃ karma*

'a *kāraka* which the agent (*kartṛ*) wishes the most is termed *karman*'

1.4.54 *svantantraḥ karttā*

'a *kāraka* which is independent (*svatantra*) is termed *kartṛ*'

The six *kārakas*, i.e. *apādāna*, *sampradāna*, *karaṇa*, *adhikaraṇa*, *karman* and *kartṛ*, have been discussed under rule 1.4.23 *kārake*. This rule has received different interpretations because (*a*) it is an *adhikāra*, (*b*) Pāṇini puts *kārake* in the locative (*saptamī*) and (*c*) *kāraka* is a technical term (*saṃjñā*). There are three possible interpretations of this rule:

(*a*) *kārake* is an *adhikāra* whereby the technical term *kāraka* is introduced,
(*b*) *kārake* states a meaning condition, and
(*c*) *kārake* serves as a qualifier (*viśeṣana*) to the domain of the terms *apādāna*, etc.

Commentators have evaluated these interpretations in light of the following considerations.

(*a*) *kāraka* is a technical term which, according to its etymological meaning, denotes a thing which brings about an action,
(*b*) the term *kāraka* should denote only the six categories of *apādāna*, etc., and
(*c*) each of the six *kāraka* categories must also be assigned the term *kāraka*.

Fact (*a*) establishes a necessary connection between *kāraka* and *kriyā* 'action'. Fact (*b*) restricts the number of things to which the term *kāraka* may be assigned. Fact (*c*) requires that a thing which serves as *apādāna* must also serve as a *kāraka*. These three facts are interrelated.

Returning to the three interpretations of 1.4.23, we find that the *Kāśikāvṛtti* seems to be following the second, i.e., the meaning condition view. This interpretation is motivated by the fact that Pāṇini puts *kārake* in the locative. The *Kāśikā* seems to interpret the word *kāraka* as *kriyā*. However, the *Kāśikā*'s interpretation, and its *vṛtti* on subsequent rules, is confusing. Consider, for example, its *vṛtti* on rule 1.4.24 *dhruvam apāye' pādānam*:[1]

> *dhruvaṃ* (*yad apāyayuktam*) *apāye sādhye* (*yad avadhibhūtaṃtat kārakam*) *apādānasaṃjñaṃ bhavati*

If one follows the 'meaning condition' view, and accordingly interprets *kāraka* as denoting *kriyā*, the above *vṛtti* should be rephrased, without that which I have enclosed in parentheses, as follows:

> *dhruvam apāye sādhye apādānasaṃjñaṃ bhavati*
> 'a thing which is *dhruva* 'fixed' when *apāya* 'movement away' is to be accomplished is assigned the name *apādāna* (ablative)'

This interpretation obviously will run into problems. For example, in sentences such as *grāmasya samīpād āgacchati* 'he is coming from the vicinity of the village', and *vṛkṣasya parṇāni patanti* 'leaves of the tree are falling', both *grāma* 'village' and *vṛkṣa* 'tree' will qualify for the assignment of the term *apādāna*. To overcome these difficulties, *Kāśikā* includes the word *apāyayuktam* in the *vṛtti* to imply that *apāya*, being a relative notion, entails *saṃśleṣa* 'conjunction'. This will rule out the assignment of the term *apādāna* to *grāma* in sentence (1) as it is the vicinity of the village and not the village itself which is in conjunction with the reference to movement away.[2] However, the difficulty mentioned in connection with the second sentence still remains. One may resort to *vivakṣā* 'intent to speak,' as has been advocated by the *Mahābhāṣya*,[3] and state that in the second sentence the speaker does not wish to speak about *vṛkṣa* as *apādāna*. This will remove the difficulty concerning *vṛkṣa* being assigned the term *apādāna*; still, *apāyayuktam* is used in the *vṛtti* as part of a relative construction with *yad...tad*. Furthermore, there is syntactic coordination between *kārakam* and *apādānasaṃjñam* which, for all practical purposes, amounts to calling *apādāna* a *kāraka*. This will run counter to the 'meaning condition view' and favour the technical term (*saṃjñā*) view of the first interpretation.

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[1] *Kāś*. I: 535.

[2] see also *Mbh*. I, 241: *nātra grāmo' pāyayuktaḥ. kiṃ tarhi? samīpam. yadā ca grāmo' pāyayukto bhavati tadā' pādānasaṃjñā.*

[3] Ibid.: *na vā eṣa doṣaḥ. kiṃ kāraṇam? apāyasyāvivakṣitatvāt nātrāpāyo vivaksitah...*

Both the 'technical term' and the 'qualifier' views have been discussed in the *Mahābhāṣya* where, according to the first interpretation, *kāraka* becomes a technical term introduced by 1.4.23 as an *adhikāra*. Many arguments have been raised against this interpretation. Why didn't Pāṇini put *kāraka* in the nominative as is his practice elsewhere? If *kāraka* is a technical term, why didn't Pāṇini define it? There is no satisfactory explanation for the locative of *kāraka* unless one abandons the *saṃjñā* view. Patañjali, however, is not bothered by the locative. He argues that since this is the domain of *ekasaṃjñā* 'one term', *kāraka* cannot be anything but a *saṃjñā*[4] which, perhaps, Pāṇini chose not to define since it already was a fairly well-known term. Besides, *kāraka*, being a derivative with *ṆvuL*, can be used as an *anvarthasaṃjñā*,[5] a technical term denoting its etymological meaning.

There are yet other problems with the *saṃjñā* view. For one thing, the term *kāraka* is introduced as a term in the domain of *ekasaṃjñā*. Since a thing which is termed *apādāna* should also be termed *kāraka*, a situation of *saṃjñāsamāveśa* 'class-inclusion' arises which goes directly against the *ekasaṃjñā* requirement. To remove this difficulty, rule splitting (*yogavibhāga*) is invoked according to which individual rules will be split in two with *kāraka* carried via *anuvṛtti*.[6] Thus, 1.4.24 *dhruvam apāye' pādānam* will be interpreted as follows.

(*a*) *apāye dhruvaṃ kārakasaṃjñaṃ bhavati*
'a thing which is fixed when movement away is denoted is termed *kāraka*'

(*b*) *apāye dhruvaṃ kārakam apādānasaṃjñaṃ bhavati*
'a *kāraka* which is fixed when movement away is denoted is termed *apādāna*'

Obviously, resorting to *yogavibhāga* will be prolix (*gaurava*). In addition, *kāraka* will be accepted as a term defined on the basis of its etymological meaning. But since *kāraka* is derived by introducing *ṆvuL* denoting *kartṛ*,

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[4] *Mbh.* I, 239-40: *kim idaṃ 'kārake' iti? saṃjñānirdeśaḥ... kāraka iti saṃjñānirdeśaś cet saṃjñino' pi nirdeśaḥ kartavyaḥ. saṃjñādhikāraś ceyam. tatra kim anyac chakyaṃ vijñātūm anyad ataḥ saṃjñāyāḥ...*

[5] *Mbh.* I, 242: *tatra mahatyāḥ saṃjñāyāḥ karaṇe etat prayojanam anvarthasaṃjñā yathā vijñāyeta 'karotīti kārakam.'*

[6] *PM* ad *Kāś.* I, 531: *ucyate saṃjñāpakṣe- apāye yad dhruvaṃ tat kārakasaṃjñaṃ bhavati, apādānasaṃjñaṃ cety ayam artho bhavati, evam anyatrāpi...*

kāraka will refer to a thing which is the doer. Since all the other *kārakas* are also participants in an action and since they also are all termed *kāraka*, they all will be treated as *kartṛ*. This being the case, Pāṇini did not have to define the term *kartṛ* by rule 1.4.54 *svatantraḥ karttā*. *Kāraka* and *kartṛ* will become synonymous. Further proposals have been made in the *Mahābhāṣya*[7] to resolve this difficulty. An action may be viewed as a composite of several actions. For example, the action of cooking denoted by verbal root *pac* underlies such actions as arranging the fire with the firewood, putting the pot on the stove, placing the rice in it, stirring the rice and finally softening (*viklitti*) it.[8]

A *kāraka* can be viewed as *svatantrakartṛ* 'independent agent' with reference to its own action. It can be termed *apādāna*, etc., with reference to the principal action. Thus, a pot (*sthālī*) because of its capacity to contain rice on a stove, can be viewed as *kartṛ*. When a speaker wishes to highlight this status of the pot, he uses it as the *kartṛ*. Of course, then the principal agent, such as Devadatta of

(1) *devadattaḥ sthālyām odanaṃ pacati*

'Devadatta is cooking the rice in the pot', is not used. As a result, we get

(2) *sthālī pacati*

'the pot is cooking'. This explanation, however, also runs into difficulty, since, of six *kārakas*, only *karman*, *karṇa* and *adhikaraṇa* can be seen as *kartṛ*. Should we accept *vivakṣā* as reason for the lack of *kartṛ* status for *apādāna* and *samprādāna*? The answer seems to be in the affirmative.

We shall now return to the third, the qualifier view. According to this view, *kārake* is treated as an *adhikāra* to restrict the application of the word *kāraka* only to the six categories of *apādāna, sampradāna, karaṇa, adhikaraṇa, karman* and *kartṛ*. The locative will then be interpreted as that of specification (*nirdhāraṇa*). However, since the question of *nirdhāraṇa* arises only when one has to specify a single entity from among many, the singular in *kārake* should be treated as denoting *jāti* 'class'. Thus, *kārake* will be equivalent to *kārakeṣu* 'among the *kārakas*'.[9] Rule 1.4.24 will then be interpreted as follows.

> *kārake (ṣu madhye) yad dhruvaṃ kārakaṃ tad apādānasaṃjñaṃ bhavaty apāye sādhye*
>
> 'a *kāraka* which is *dhruva* when movement away is to be accomplished is termed *apādāna*'

This interpretation still subscribes to the idea that *kāraka* denotes its etymological meaning, *kartṛ*. It is suggested that this difficulty can be removed by treating an action as a composite of several actions.[10] Most of the interpretation problems entailed by 1.4.23 stem from the locative in *kārake*. The qualifier interpretation is preferable because it does not propose to interpret locative as nominative, nor does it resort to rule-splitting (*yogavibhāga*).

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[7] *Mbh*. I, 242-43: *...pratikārakaṃ kriyābhedāt. pacādīnāṃ hi pratikārakaṃ kriyā bhidyate...*

[8] Ibid.: *adhiśrayaṇodakaśecanataṇḍulāvapanaidhopakarṣaṇādikriyāḥ kurvann eva devadattaḥ pacatīty ucyate. tatra tadā paci vartate...*

[9] *PM ad Kāś*. I, 531: *viśeṣaṇādhikāre tu- kārakeṣu madhye yad apāye dhruvaṃ kārakam ity artho labhyate, nirdhāraṇasya sajātīyaviṣayatvād iti...*

Questions have been raised concerning whether a *kāraka* is a thing and whether or not the different *kārakas* are one and the same. A *kāraka* may be a thing but a thing is not always a *kāraka*. What makes a thing a *kāraka* is the power (*śakti*) of bringing an action towards completion. This power does not inhere in things. Instead, they can serve as substratum for it. When a thing serves as the substratum for power, the thing is a *kāraka*. Since all *kārakas* serve as means towards completing an action and all share the same power served by things as their substratum, all *kārakas* are the same. However, differences among the *kārakas* are maintained. A difference is to be maintained between the agent (*kartṛ*) and the other *kārakas* because it is the *kartṛ* which brings other *kārakas* into play. The power to act as *kartṛ* comes to the agent prior to all the other *kārakas*.[11] Since every action is looked upon as a composite of several subordinate actions, *kārakas* of these subordinate actions can be treated as *kartṛ*. They are not independent with regard to the main action. However, in regard to their subordinate actions, they are independent. The *kāraka* also may be viewed differently depending upon *vivakṣā* 'intent of the speaker'. Thus, what is looked upon as object (*karman*) can be looked upon as *kartṛ* if the speaker wishes to speak about it as such. A grammarian would rather view the *kārakas* as one and the same, but he is forced to view them as distinct since he believes in the authority (*prāmāṇya*) of words (*śabdạ*) and words are determined by usage and usage follows the realities of the outside world (*loka*). Thus, the grammarian has to follow the practice in the outside world where people do view the *kārakas* as different. Hence the grammarian views them as different. Related to this aspect of the *kāraka* is the question whether things which serve as *kārakas* must be animate. A *kāraka*, in view of the traditional grammarians, does not necessarily have to be animate.

Pāṇini constrains the rules of the *kāraka* domain by rules 1.4.1 *ā kaḍārād ekā saṃjña* and 1.4.2 *vipratiṣedhe paraṃ kāryam*. These rules state that only one term per nominatum (*saṃjñin*) should be assigned. A conflict between two terms is to be resolved in favour of the term introduced by the subsequent rule. It should be noted here that resolving conflicts between two terms is not solely the function of rule 1.4.2. Indeed, some conflicts related to the assignment of terms from this *ekasaṃjñā* domain cannot be solved by 1.4.2. This rule resolves conflicts only between two terms which are both *sāvakāśa* 'with scope of application'.[12] Conflicts between two terms of this domain where one term is *sāvakāśa* and the other *niravakāśa* 'without any scope of application elsewhere' are resolved on the basis of *niravakāśatva* under the requirement of 1.4.1 *ā kaḍārād...*

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[10] see above fn. 7.

[11] *VP*. III:140: *prāg anyataḥ śaktilābhān nyagbhāvāpādanād api; tadadhīnapravṛttitvāt pravṛttānāṃ nivartanāt.*

Consider the following examples.

(3) *krūrāya krudhyati*
'... is angry with the cruel one'
(4) *krūram ahikrudhyati*
'id'
(5) *gehaṃ praviśati*
'... is entering the house'
(6) **gehe praviśati*
'id.'

Krūra 'cruel' in (3) is used with *caturthī* 'fourth triplet of nominal ending' to express *sampradāna* (2.3.13 *caturthī sampradāne*), but, in (4) it is used with *dvitīyā* 'second triplet of nominal ending' to express *karman* (2.3.2 *karmaṇi dvitīyā*). *Krūra* in (3) is assigned *sampradāna* since it is identified as one towards whom anger is directed (1.4.37 *krudha...yaṃ prati kopaḥ*). It is assigned *karman* in (4) because there *krudh* 'to be angry' is used with the preverb *abhi* (1.4.38 *krudhadruhor upasṛṣṭayoḥ karma*). Now, 1.4.37 is *sāvakāśa* as it may apply to sentences where *krudh* is used without a preverb, but, 1.4.38 will be redundant if it does not apply in situations where *krudh* is used with a preverb. Nothing in 1.4.37 restrains its application to *krūra* because of 1.4.38 being vacuous (*vyartha*). As a consequence, 1.4.38 blocks 1.4.37 and assigns *karman* uniquely to *krūra*. Remember that this conflict, because of the *niravakāśatva* of 1.4.38, cannot be resolved on the *paratva* basis mentioned in 1.4.2.

Sentences (5) and (6) illustrate a conflict between two terms, *adhikaraṇa* and *karman*, resolved on the basis of *paratva* and *sāvakāśatva*. These sentences use *geha* 'house' in *dvitīyā* and *saptamī* 'seventh triplet of nominal ending' (2.3.36 *saptamy adhikaraṇe...*) respectively to express *karman* (1.4.46 *adhiśīṅsthāsāṃ karma*) and *adhikaraṇa* (1.4.44 *ādhāro' dhikaraṇam*). Sentence (6) is ungrammatical because *geha* cannot be termed locus (*adhikaraṇa*) and hence, *saptamī* cannot be introduced to express it. This does not mean that a conflict between rules 1.4.44 and 1.4.46 does not arise. Both *karman* and *adhikaraṇa* are terms which are *sāvakāśa* elsewhere. They are equally applicable to *geha* in (5). Rule 1.4.2 is invoked to resolve the conflict in favour of *karman* introduced by Rule 1.4.46 which is subsequent to 1.4.44.

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[12] *Mbh*. I, 204: *dvau prasaṅgau yadānyārthau bhavata ekasmiṃśca yugapat prāpnutaḥ...*

Since Pāṇini resolves certain conflicts involving the *kāraka* terms on the basis of *paratva*, the ordering of rules which enumerate them is important. The notion of *paratva* requires that the *kāraka* rules be arranged in a sequence most conducive to resolving conflicts. Pāṇini enumerates the six *kāraka* terms in the order of *apādāna, sampradāna, karaṇa, adhikaraṇa, karman* and *kartṛ*. One can assume that *kartṛ* will prevail in conflicts over the assignment of the other *kāraka* terms. Similarly, *karman* will prevail over all the other *kārakas* besides *kartṛ*. The relative strength of the other *kārakas* can also be determined. However, one should not overplay this relative strength as there may be conflicts entailing *niravakāśatva* which may also be resolved in favour of a rule which may not be subsequent.

Pāṇini specifies his *kāraka* categories based upon the principle of *sāmānya* 'general', *viśeṣa* 'particular' and *śeṣa* 'residual'. The six categories are identified by general rules formulated based upon linguistic generalizations. Particular rules form exceptions to them. Usage which cannot be accounted for by the above two rule types is governed by rules relegated to the residual category. It is obvious that these exceptions are necessary to capture the peculiarities of usage falling outside the scope of the general rules. One can also interpret it as Pāṇini's desire not to class a certain thing *x* as belonging to the class *y* under the provision of a general rule *z*. In any case, Pāṇini's formulation of particular rules constitutes an effort on his part to readjust his *kāraka* definitions.

It has already been stated that action (*kriyā*) denoted by means of verbal roots is central to the idea of *kārakas* which act as participants in bringing an action to accomplishment. It is only logical that readjustments be offered in view of the nature of both the action as well as its related participants. Since a general rule classes a *kāraka* category in view of generalization, readjustments must be offered relative to particulars. The following is a tabular listing of general *kāraka* rules followed by particular details concerning readjustments.

KĀRAKA

sūtra *1*	Participant 2	Action *3*	Category *4*
1.4.24 *dhruvam apāye' pādānam*	*dhruvam* 'fixed'	*apāya* 'movement away'	*apādāna*
1.4.25 *bhītrārthānāṃ bhayahetuḥ*	*bhayahetuḥ* 'source of fear'	denoted by roots having the meaning of *bhī* 'to fear' and *trā* 'to protect'	—do—
1.4.26 *parājer asòḍhaḥ*	*asoḍhaḥ* 'unbearable'	denoted by *ji* 'to win' used with the preverb *parā*	—do—

1	2	3	4
1.4.27 *vāraṇārthānām īpsitaḥ*	*īpsitaḥ* 'desired'	denoted by roots meaning *vāraṇa* 'to ward off'	*apādāna*
1.4.28 *antarddhau yenādarśanam icchati*	he by whom one does not want to be seen	*antarddhi* 'hiding'	—do—
1.4.29 *ākhyātopayage*	*ākhyātā* 'relator'	*upayoga* 'regular instruction'	—do—
1.4.30 *janikarttuḥ prakṛtiḥ*	*karttuḥ prakṛtiḥ* 'material cause of the agent'	*jan* 'to be born'	—do—
1.4.31 *bhuvaḥ prabhavaḥ*	*prabhavaḥ* 'place of origin'	denoted by *bhū* 'to be, become'	—do—
1.4.32 *karmaṇā yam abhipraiti sa sampradānam*	he whom the agent intends as the goal	......	*sampradāna*
1.4.33 *rucyarthānāṃ prīyamāṇaḥ*	*prīyamāṇaḥ* 'one who is pleased'	denoted by roots meaning *ruc* 'to please'	—do—
1.4.34 *ślāghahnuṅsthāśapāṃ jñīpsyamānaḥ*	*jñīpsyamānaḥ* 'one who is informed'	denoted by *ślāgh* 'to praise', *hnuṅ* 'to hide', *śap* 'to swear'	—do—
1.4.35 *dhārer uttamarṇaḥ*	*uttamarṇaḥ* 'creditor'	denoted by *dhāri* 'to owe'	—do—
1.4.36 *spṛher īpsitaḥ*	*īpsitaḥ* 'desired'	denoted by *spṛhĀ* 'to yearn after	—do—
1.4.37 *krudhadruherṣyāsūyārthānāṃ yaṃ prati kopaḥ*	*yaṃ prati kopaḥ* 'one toward whom anger is directed'	denoted by *krudhĀ* 'to be angry', *druhĀ* 'to wish harm to', *īrṣyĀ* 'not to tolerate', and *asūya* 'to find fault'	—do—
1.4.38 *krudhadruhor upasṛṣṭayoḥ karma*	—do—	denoted by *krudh* and *druhĀ* used with a preverb	*karman*
1.4.39 *rādhīkṣyor yasya vipraśnaḥ*	*yasya vipraśnaḥ* 'one about whom inquiries are made'	denoted by *rādhĀ* 'to satisfy' and *īkṣĀ* 'to look to'	—do—
1.4.40 *pratyāṅbhyāṃ śruvaḥ pūrvasya karttā*	*pūrvasya karttā* 'agent of a prior act of requesting'	denoted by *śru* 'to hear' used with the preverb *prati*	—do—
1.4.41 *anupratigṛṇaś ca*	—do—	denoted by *gṛ* 'to chant' used with *anu* and *prati*	—do—

1	*2*	*3*	*4*
1.4.42 *sādhakatamaṃ karaṇam*	*sādhakatamam* 'a thing which is most instrumental'	....	*karaṇa*
1.4.43 *divaḥ karma ca*	*karman* 'object'	denoted by *div* 'to play'	—do—
1.4.44 *parikrayaṇe sampradānam anyatarasyām*	*karaṇa*	denoted by roots meaning *parikrayaṇa* 'bonded labour'	*sampradāna*
1.4.45 *ādhāro' dhikaraṇam*	*ādhāraḥ* 'locus'	.....	*adhikaraṇa*
1.4.46 *adhīśīṅ-sthāsāṃ karma*	*karman*	denoted by *śīṄ* 'to recline', *sthā* 'to stand', *āsÃ* 'to sit' when used with the preverb *adhi*	—do—
1.4.47 *abhiniviśaḥ*	—do—	denoted by *viś* 'to enter' used with *abhi* and *ni*	—do—
1.4.48 *upānvadhyāṅ-vasaḥ*	—do—	denoted by *vasÃ* 'to dwell' used with *upa*, *anu*, *adhi* and *āṅ*	—do—
1.4.49 *karttur īpsitatamaṃ karma*	*karttur īpsitatamam* 'most desired by the agent'	.....	*karman*
1.4.50 *tathāyuktaṃ cānīpsitam*	*karttur anīpsitam* 'something other than what is desired by the agent'	.....	—do—
1.4.51 *akathitaṃ ca*	*akathitam* 'not stated thus far'	....	—do—
1.4.52 *gatibuddhi-pratyavasānā-rthaśabdakarmā-karmākāṇām aṇi karttā sa ṇau*	*aṇi karttā* 'non-causal agent'	causal action denoted by roots meaning *gati* 'motion' *buddhi* 'perception' *pratya-vasāna* 'to consume'; actions with noise as *karman*; and actions with no *karman*	—do—
1.4.53 *hṛkor anyata-rasyām*	*karttā*	non-causal action denoted by *hṛÑ* 'to carry', *ḌUkṛÑ* 'to do, make'	—do—
1.1.54 *svatantraḥ karttā*	*svatantraḥ* 'independent'	.....	*kartṛ*
1.4.55 *tatprayo-jako hetuś ca*	*karttuḥ prayojakaḥ* 'instigator of the agent'	.....	*kartṛ, hetu*

A review of these tabular statements reveals some interesting facts. The six *kāraka* categories are defined in terms of generalized semantic equivalents. However, no one-to-one correspondence between the semantic equivalent and corresponding assignment of a *kāraka* term is acceptable. A *kāraka* is simply a participant in an action. The *kāraka* category to which a participant is assigned depends upon the nature of the action, the role this participant plays in that action and the manner in which the speaker wishes to speak about that role. A participant in an action is a *kāraka* with reference to that action. Generally one would expect that a category *x* would be assigned to a particular *kāraka* in accordance with the semantic equivalency, but this may not be the case. A *kāraka* may be viewed as belonging to category *x* in regards to semantic equivalency, yet it may be classed in category *y*. This amounts to saying that a *kāraka* refers to the category as classed and not a semantic equivalent.[13]

The following sentences illustrate these observations.

(7) *himavato gaṅgā prabhavati* (1.4.31)
'the *Gaṅgā* originates in the Himālaya'
(8) **himavati gaṅgā prabhavati* (1.4.45)
(9) *yavebhyo gā vārayati* (1.4.27)
'...is warding cows off the barley'
(10) *phalebhyaḥ spṛhayati* (1.4.36)
'...yearns for fruits'
(11) *phalāni spṛhayati* (1.4.49)
(12) *devadattāya ślāghate* (1.4.34)
'...is praising Devadatta'
(13) **devadattaṃ ślāghate* (1.4.49)
(14) *krūrāya krudhyati* (1.4.37)
'is angry with the cruel one'
(15) *krūram abhikrudhyati* (1.4.38)
(16) *akṣān dīvyati* (1.4.43)
'...plays the dice'
(17) *akṣair dīvyati* (1.4.42)
'...plays with dice'
(18) *śatena parikrīṭaḥ* (1.4.42)
'...hired for a hundred'
(19) *śatāya parikrīṭaḥ* (1.4.44)
(20) *grāme vasati* (1.4.45)
'...is living in the village'
(21) *grāmam abhiniviśate*
'...enters the village'
(22) *grāmam adhiśete* (1.4.46)
'...sleeps in the village'

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[13] See also Cardona (unpublished (a)).

(23) *devadattaḥ grāmād āgatya kāṣṭhaiḥ sthālyām odanaṃ pacati*
'Devadatta, having returned from the village, is cooking rice with firewood in the pot'
(24) *sthālī pacati* (1.4.54)
'the pot is cooking'
(25) *odanaḥ pacati* (1.4.54)
'the rice is cooking'
(26) *kāṣṭhāni pacanti* (1.4.54)
'the firewoods are cooking'

Recall that *apādāna, sampradāna, karaṇa, adhikaraṇa, karman* and *kartṛ* have been defined with generalized semantic equivalencies as *dhruva* (1.4.24)—...*yam abhipraiti* (1.4.34), *sādhakatamam* (1.4.42), *ādhāraḥ* (1.4.45), *īpsitatamam* (1.4.49) and *svatantraḥ* (1.4.54) respectively. Sentences (8) and (13) are incorrect because they attempt to assign the categories *adhikaraṇa* and *karman* to *himavat* and *devadatta* in accordance with the semantic equivalents. Rules 1.4.31 and 1.4.34 which expressly require the assignment of *apadāna* and *karman* will be rendered without any scope of application (*niravakāśa*). Thus, what could have been semantically classed as *adhikaraṇa* and *karman* are classed as *apādāna* and *sampradāna*. These rules are both occasioned by what one may call surface constraints. Similar constraints operate in the formation of rules 1.4.27, 1.4.36, 1.4.38, 1.4.46 and 1.4.47. Rule 1.4.27 requires that a *kāraka* serving as a thing desired, when roots having the signification of *vāraṇa* are in use, is termed *apādāna*. Rule 1.4.36 assigns the category *sampradāna* to a thing one desires, when, of course, the action is denoted by *spṛh* 'to yearn'. Sentences (9), (10), (15), (21) and (22) illustrate this.

Sentences (23) through (26) are included to illustrate the aspect of *vivakṣā*. Sentence (23) uses *grāma, kāṣṭha, sthālī* and *odana* to denote respectively *apādāna, karaṇa, adhikaraṇa* and *karman*. *Kartṛ* is expressed by the verbal ending *tiP*. Sentences (24), (25) and (26) view *sthālī, odana* and *kāṣṭha* as their *kartṛ*; of course, *devadatta*, the main *kartṛ* of (23) is not used in these sentences. Commentators explain that *sthālī, odana* and *kāṣṭha* are all *kartṛ* with reference to their own actions (see above fns. 7, 8). A speaker may wish to highlight their *kartṛtva* and consequently may use sentences (24-26). It is interesting to note that there are no examples where *apādāna* and *sampradāna* are used as *kartṛ*. Patañjali, however, cites

(27) *balāhako vidyotate*
'the cloud is lightening'

parallel to sentences

(28) *balāhakād vidyotate*
'it is lightening from the clouds', and

(29) *balāhake vidyotate*
'it is lightening in the clouds'[14]

No such examples are cited for the *kartṛtva* of *sampradāna*. Even with the above examples, one must treat certain expressions as understood. Thus, (28) would be treated as *balāhakād niḥsṛtya vidyotate* 'having come out of the clouds...' where *niḥsṛtya* will be treated as understood (*Bhāṣāvṛtti*:42). Such usage of *apādāna* becomes parallel to *prāsādāt prekṣate* 'he is looking from top of the palace' where (*prāsādam*) *āruhya* 'having climbed (on top of the palace)' is to be supplied (*Bhāṣāvṛtti*:79).

I have already stated that 1.4.51 *akathitaṃ ca* is residual (*śeṣa*) in nature. It states that a *kāraka* not classed as *apādāna*, etc., is classed as *karman*. A long discussion of the need for and exact scope of this rule is presented in the *Mahābhāṣya* (*Mbh*. II:413-28), especially with reference to a select list of verbs involving double objects. Thus, in

(30) *pauravaṃ gāṃ yācate*
'he asks *Paurava* for a cow', and

(31) *gāṃ dogdhi payaḥ*
'he milks the milk from the cow'

go and *payas* are objects under the provisions of 1.4.49. Rule 1.4.51 assigns the term *karman* to *Paurava* and *go* which would have been confused with category *apādāna*.

Commentators have investigated the scope of the general *kāraka* categories at length. They have scrutinized not only the general properties of these *kārakas*, they have also discussed their subtypes. For example, the *Mahābhāṣya* questions the propriety of stating additional rules specifying the category *apādāna*.[15] That is, a question is raised whether rules 1.4.25 through 1.4.31 are even required at all. According to this view, 1.4.24 alone is sufficient to handle the instances of *apādāna* covered by these later rules. To do this, one must stipulate that *apāya* 'movement away' need not just be physical; mental turning away also counts. Consequently, the source of fear (1.4.25) and the thing unbearable (1.4.26) could serve as *dhruva* for purposes of mental contact and aversion. Similar arguments are made against other rule formulations. Examples such as

(32) *dhāvato' śvāt patati*
'he is falling off the running horse'

are cited to illustrate that *dhruva* should not be interpreted in its literal sense of being fixed. Instead, it should be interpreted as point of reference for movement away. This would allow a running horse to serve as fixed point for *apāya* since in a spatio-temporal continuum characterized by the act of running, the fall of the rider must have occurred at some particular point in time and space. Based upon whether the *apāya* is explicitly mentioned (*nirdiṣṭa*), indirectly included (*upātta*) or inferred, three types of *apādāna* are discussed: *nirdiṣṭaviṣaya*, *upāttaviṣaya* and *apekṣitakriya* (*VP*.III:392). Sentences (33-36) illustrate these subtypes.

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[14] *Mbh*. I, 204: *...tayoḥ paryāyeṇa vacanaṃ bhaviṣyati. vacanāśrayāc ca saṃjñā bhavisyati. tad yathā- balāhakād vidyotate vidyut. balāhake vidyotate. balāhako vidyotata iti.*

[15] *Mbh*. I, 250-51: *ayaṃ yogaḥ śakyo' vaktum. kathaṃ vṛkebhyo bibheti caurebhyas trāyata iti? iha tāvat-...ya eṣa manuṣyaḥ prekṣāpūrvakārī bhavati sa paśyati yadi māṃ vṛkāḥ paśyanti dhruvo me mṛtyur iti. sa buddhyā samprāpya nivartate, tatra "dhruvam apāye' pādānam" ity eva siddham...*

(33) *grāmād āgacchati*
'...is coming from the village'

(34) *balāhakād vidyotate vidyut*
'...the lightening emanates from the clouds'

(35) *kuto bhavān?*
'where have you come from?'

(36) *pāṭalipūtrāt*
'from Pāṭalipūtra'

Pāṇini uses the word *karman* both in the sense of the object and of the action. The word *karmaṇā* in 1.4.32 *karmaṇā ...sampradānam* has been interpreted both ways. If one interprets *karmaṇā* as 'by means of an object', a *kāraka* intended by means of an object will be treated as *sampradāna*. This would qualify the village (*grāma*) of

(37) *ajāṃ grāmaṃ nayati*
'he is leading the goat to the village'

to be wrongly termed *sampradāna*. To avoid this, an appeal is made to treat *sampradāna* as carrying its etymological meaning 'he to whom something is properly given' (*samyak prakarṣeṇa dīyate yasmai*).[16] This, however, will restrict the use of *sampradāna* to actions denoted by verbs having the signification of *dā* 'to give'. The *karman* 'object' interpretation will still rule out assignment of *sampradāna* to a *kāraka* joining in an action denoted by an intransitive verb root. Consequently, *śrāddha*, *yuddha* and *pati* would not qualify for *sampradāna* in

(38) *śrāddhāya nigarhate*
'he disapproves of the *śrāddha* ritual',

(39) *yuddhāya sannahyate*
'he prepares for battle', and

(40) *patye śete*
'she reclines for her husband'.

Patañjali recommends that the word *kriyayā* 'by means of an action' should be read in the rule along with *karmaṇā*.[17] Thus, *śrāddha*, *yuddha* and *pati* will be entities intended by the action. But the question is: why didn't Pāṇini consider it. Besides, as Joshi says,[18] this would apply equally to *karman* 'object'. To avoid this, one may allow a conflict to obtain between *sampradāna* and *karman* which is resolvable, by 1.4.2, in favour of *karman*. Thus, in

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[16] *Nyāsa* ad *Kāś*. I, 545: ...*yadi karmaṇā yam abhipraiti sa sampradānasaṃjño bhavati, evam ajāṃ nayati grāmam ity ajādibhir nayanakriyākarmabhiḥ sambadhyamānasya grāmasya sampradānasaṃjñā prasajyeta... sampradānam iti mahatyāḥ karaṇasyaitat prayojanam anvarthasaṃjñā yathā vijñāyeta samyak prakarṣeṇa dīyate yasmai tat sampradānam iti...*

[17] *Mbh*. I, 256: *kriyāgrahaṇam api kartavyam. ihāpi yathā syāt śrāddhāya nigarhate, yuddhāya sannahyate, patye śete iti.*

(41) *upādhyāya gāṃ dadāti*
'he is giving the cow to the teacher'

go uniquely will be termed *karman*. Patañjali does not accept *sampradāna* as the indirect object of *dā* 'to give'.[19]

Pāṇini uses superlatives in defining *karaṇa* and *karman*. The *-tamaP* of 1.4.42 and 1.4.49 requires that only the means *par excellence* be termed *karaṇa*. Similarly, the thing desired more than anything else is to be termed *karman*. Since all *kārakas* serve as means towards accomplishing an action, they all could be termed *karaṇa*. The use of *-tamaP* prevents this. Specifically, Pāṇini assigns the term *sampradāna* to the thing desired (*īpsita*) when it participates in an action denoted by *spṛh*. Obviously the absence of *-tamaP*, in *īpsita*, takes it out of the realm of the *karman* category. Rule 1.4.27 states that a desired thing is termed *apādāna* when participating in an action denoted by roots having the signification of *vāraṇa* 'to ward off'. Now if *-tamaP* is used in 1.4.49, *māṇavaka* 'boy' would qualify for both *apādāna* and *karman* in

(42) *agner māṇavakaṃ vārayati*
'he is warding the boy off the fire'

The *karman* designation cannot prevail on the basis of *paratva* since 1.4.27 then would be left with no scope of application. This is further justification for keeping *-tamaP* in 1.4.49.

Bhartṛhari,[20] in the *Vākyapadīya* discussed three different types of *karman* 'object': *nirvartya* 'that which is brought about', *vikārya* 'that which is modified' and *prāpya* 'that which is reached'. A *nirvartya* object is one which is brought into existence. Thus, we get a sentence such as *mṛdā ghaṭaṃ karoti* 'he makes a pot with clay'. The pot here is newly brought into existence. As opposed to this, we find a sentence such as *suvarṇaṃ kuṇḍale karoti* 'he makes gold into ear-rings'. In this case, the gold attains a modified form (*vikārya*) but the material cause of the ear-rings is still the same. Instances where the material cause of a thing is totally destroyed would still be called *vikārya* although treated differently from one where the material cause is intact, as is the gold in the ear-rings. Consider *kāṣṭhaṃ bhasma karoti* 'he reduces the wood to ashes'. Here the material cause, wood, is completely destroyed. Finally, a *prāpya-karman* is beyond the effect of the action. At least no effect of action can be seen or inferred upon it. Thus, in sentences *ādityaṃ paśyati* 'looks at the sun' and *grāmaṃ gacchati* 'goes to the village', sun and village remain unaffected by the actions of seeing and going respectively. Note that in the two earlier types, the action does affect the *karman*. In case of *nirvartya-karman*, the material attains a new identity; in *vikārya,* it may be either totally destroyed or retained.

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[18] Joshi (1975:109-10).

[19] Ibid.

[20] *VP*. III: 138: *nirvartyo vā vikāryo vā prāpyo vā sādhanāśrayaḥ, kriyāṇām eva sādhyatvāt siddharūpo' bhidhīyate.*

Additionally, four subtypes of *karman* have been recognized. Consider the following sentences.

(43) *grāmaṃ gaccan tṛṇaṃ śpṛśati*
'while going to the village he is touching the straw'

(44) *viṣaṃ bhuṅte*
'he is consuming poison'

(45) *māṇavakaṃ panthānaṃ pṛcchati*
'he is asking the boy the direction'

(46) *māṇavakam abhikrudhyati*
'he is angry with the boy'

Sentence (43) has *tṛṇa* 'straw' as an object which is attained with indifference *(audāsīnya)*. The poison (*viṣam*) of sentence (44) is certainly not desired by the agent, but is related to the action in the same way something desired would be related; this is aptly called an instance of *anīpsita* 'undesired' *karman*. Sentence (45) illustrates an instance of *akathita* 'not stated' *karman*. Thus, *māṇavaka* 'boy' is a *karman* which cannot be covered by categories previously classed. The *karman* status of *māṇavaka* in sentence (46) is different. It represents a type of *karman* which has previously been classed as some other *kāraka*. Thus, he towards whom anger is directed is classed as *sampradāna* 'dative'. However, here *māṇavaka* is classed as *karman* even though he is the one towards whom anger is directed. Why — because the verbal root *krudh* is used with the preverb *abhi*. Consequently, what was classed as *sampradāna* now is classed as *karman*.

Commentators also recognize three types of *adhikaraṇa*:[21] *vyāpya* where the locus totally encompasses the thing located in it, *aupaśleṣika* where the locus is characterized by proximity and *vaiṣayika* where it is characterized regardless of any physical contact or nearness. Thus, we find respectively

(47) *tileṣu tailam*
'there is oil in sesame'

(48) *gaṅgāyāṃ ghoṣaḥ*
'the dwelling of cowherds on the bank of the Gaṅgā' and

(49) *garau vasati*
'he is staying with the teacher'.

Kartṛ is the last *kāraka* term of the domain. It has been defined as one who participates in an action completely of his own accord. It is said to be independent (*svatantra*) in comparison to the participation of other

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[21] Iyer (1969:323).

kārakas in an action. If action can be accepted as the central denotatum of a Sanskrit sentence, *kartṛ* is an a priori *kāraka*. The independence of an agent lies in the fact that it is the first *kāraka* to embark upon the accomplishment of an action. The other *kārakas* are brought into play by the agent. It is also the last *kāraka* to cease its activity (see above fn. 11).

Since an action denoted by a primitive root is distinguished from one denoted by a derived causative root, a distinction between their agents must be maintained. Pāṇini additionally assigns the term *hetu* to the *kartṛ* of a causal action. Questions have been raised whether *Devadatta* of

(50) *devadattaḥ pacati*
'Devadatta is cooking',

and *Yajñadatta* of

(51) *devadattaḥ yajñadattena pācayaty odanam*
'Devadatta has Yajñadatta cook the rice'

can be treated on par with respect to their independence (*svātantrya*). In (51), Devadatta is a prompter agent who has prompted agent Yajñadatta cook the rice. The prompter agent clearly can be viewed as more independent than the prompted one who becomes a *kāraka* in an action only after already having been prompted. Patañjali,[22] however, states that even though Yajñadatta has to wait to be prompted to act, he is independent with respect to the action of cooking in (51).

It has already been stated that based upon *vivakṣā*, a *kāraka* can be classed as *kartṛ*. Consider sentence

(52) *devadattaḥ sthālyām agninā pacaty odanam*
'Devadatta is cooking rice with fire in the pot'

The locus (*adhikaraṇa*), instrument (*karaṇa*) or object (*karman*) of (52) may be classed as *kartṛ* to yield the following sentences.

(53) *sthāly agninā pacaty odanam*
'the pot is cooking the rice with fire'
(54) *sthālyām agniḥ pacaty odanam*
'the fire is cooking the rice in the pot'
(55) *sthālyām agninā odanaḥ pacati*
'the rice is cooking in the pot by means of fire'

As is evident, the main agent, Devadatta, is not expressed in these sentences. Their passive counterparts will be as follows.

(56) *devadattena sthālyām agninā pacyata odanaḥ*
'rice is being cooked by Devadatta with fire in the pot'
(57) *sthālyā agninā pacyata odanaḥ*
'rice is being cooked by the pot with fire'
(58) *sthālyām agninā odanaḥ pacyate*
'rice is being cooked by fire in the pot'

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[22] *Mbh.* I, 278: ... *pācayaty odanaṃ devadatto yajñadatteneti svatantro' sau bhavati. itarathā akurvaty api kārayatīti syāt.*

(59) *sthālyām agninā odanena pacyate*
'cooking is done by the rice in the pot with fire'

The expression of the *kāraka* relationship by nominal endings and verbal forms is not problematic in these sentences. It follows 3.1.68 *laḥ karmaṇi cā bhāve cākarmakebhyaḥ* which states that an affix *LA* is used after a transitive verb to express either an agent or object, and after an intransitive verb to express either agent or *bhāva*. Now consider the following sentences.

(60) *devadattaḥ hasati*
'Devadatta is laughing'
(61) *devadattena hasyate*
'id'.
(62) *devadattayajñadattau hasataḥ*
'Devadatta and Yajñadatta are laughing'
(63) *devadattayajñadattābhyām hasyate*
'Devadatta and Yajñadatta are laughing'
(64) *devadattayajñadattau grāmaṃ gacchataḥ*
'Devadatta and Yajñadatta are going to the villages'
(65) *devadattayajñadattābhyāṃ grāmo gamyate*
'the villages are being gone to by Devadatta and Yajñadatta'

Notice that the verbal root *has* 'to laugh' is intransitive. Consequently, a *LA* affix introduced after it must denote either the agent or *bhāva*. Sentence (60) has a replacement in *ti* which, in turn, expresses the agent. Sentence (61) expresses the agent with *tṛtīyā*, the third triad of *sUP*. As a result, *hasyate* of (61) is expressing the *bhāva*. Now, compare (62) and (63). Both have dual agents. In the active, where the verb is expressing the agent, its form is in dual. However, in (63) where the verb is expressing *bhāva*, it remains singular even though there are two agents. A verb root expressing *bhāva* is always put in the third person singular because *bhāva* 'root sense' itself lacks duality or plurality. As opposed to this, where agent or object is expressed, as in (64) and (65), there is an agreement of number and person in the verbs.

Bhaṭṭoji[23] explains that when a *kāraka* other than an agent is treated as agent because of *vivakṣā*, an additional meaning is expressed, explained as *saukaryātiśaya* 'extreme facility'. This is the quality which enables an object, instrument or locus, when classed as agent, to accomplish the act as an agent. The fact that what was object, etc., can be viewed as agent has consequences for the denotatum of *LA*. We know that a *LA* is introduced after transitive roots when agent or object is denoted. However, when what was object becomes agent, we find that the verb has lost its object and hence the *LA* of a transitive verb expresses *kartṛ* or *bhāva* just as it does with intransitive roots. That is, a transitive root whose object is, for reasons of *saukaryātiśaya*, treated as agent, becomes intransitive. Once intransitive, its *LA* can be introduced to express only agent or root sense. Thus we get:

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[23] *SK.* III:609-26.

(66) *odanaṃ pacati*
'he is cooking rice'

(67) *odanaḥ pacati*
'the rice is cooking'

(68) *odanena pacyate*
'the rice is being cooked'

(69) *odanaḥ pacyate*
'rice is cooking'

This last sentence is problematic. It has an agent which was object. Consequently, its verb is now intransitive and must either express agent or *bhāva*. Now, what is being expressed by the verb of (69)? If *bhāva*, then why is the agent *odana* still in the nominative; if agent, then why is *yaK* introduced? Pāṇini's rule 3.1.87 *karmavat karmaṇā tulyakriyaḥ* informs us that an agent is treated as object when the action of the agent is identical with an action which has the object as its locus. An action is treated as having its object as locus when the object is affected by the action. The rice is the locus of the action of cooking since the rice, when cooked, undergoes changes such as *viklitti* 'softening'. Note that 3.1.87 is an extension rule whereby something which was not available is made available and what is made available is operation (*kārya*). In sentences (68) and (69), the verb is intransitive. Consequently, it will express either agent or *bhāva*. Affix *yaK* is introduced before an *ātmanepada* affix when *karman* or *bhāva* is being expressed (1.3.9 *bhāvakarmaṇoḥ*). Since the verb of (69) is intransitive and *odana,* the agent, is in the nominative, the verb must express the agent. Given this, however, the form would be (67) *odanaḥ pacati* and not (69). To account for (69), Pāṇini, by 3.1.87, extends *karman* status to the agent which is expressed by the verb. This extension results in the introduction of *yaK*, etc., so that (69) can be derived.

One may ask here why such an extension cannot be made for (68) where (*odana,* the agent, marks an activity similar to an object, as provided for by 3.1.87. First of all, in (68), the *LA* is introduced to express *bhāva*, not agent. Secondly, the agent is treated as if it were an object only when one wishes to view it as an object. Otherwise, one would derive (68) only. Furthermore, examples such as (69) are cited as having an addition: *svayam eva* 'just by itself', which, in turn, denotes *saukaryātiśaya*. When *saukaryātiśaya* is not expressed, when one does not wish to view the agent as an object, one remains with (68).

Commentators explain this process of treating the agent as object as *karmavadbhāva*. This is only possible with reference to actions which have object as their locus (*karmasthakriya*). Thus, *pac* 'to cook' and *bhid* 'to split' are actions which have, for example, *odana* 'rice' and *kāṣṭha* 'wood' as their locus. Now consider the verbal root *gam* 'to go'. The action denoted by this verb is located not in the object of going, such as *grāma* 'village', but in the agent, the one who goes. Similarly, the action denoted by *smṛ* 'to remember' has its locus again in the agent. Such agents cannot be treated as object. This blocks sentences such as

(70) **grāmo gamyate svayam eva*
'the village, by itself, is gone to'.

Let us now discuss the nominal endings (*vibhakti*) which Pāṇini introduces after items termed nominal stems (*prātipadika*: 1.2.45 *arthavad...*, 1.2.46 *kṛttaddhita...*). A sentence may entail relations which may not be captured by the *kāraka* categories. I shall refer to these as non-*kāraka* relations. These relations are purely notional as distinct from *kāraka* relations which are grammatical. For example, in

(71) *vṛkṣasya parṇāni patanti*
'the leaves of the tree are falling'

vṛkṣa 'tree' is not a *kāraka* as it does not contribute anything towards accomplishing the action of falling (*patana*). Consequently, *vṛkṣa* does not relate to the action as a *kāraka*. Pāṇini introduces nominal endings to express both *kāraka* and non-*kāraka* relations.

Rule 2.3.1 *anabhihite* governs the introduction of nominal endings. It states that a nominal ending should be introduced only when relations denoted by it are not already expressed by something else. Commentators[24] explain that the denotatum of a nominal ending may be expressed by means of a *tiṄ* 'verbal ending' (3.4.78 *tiptasjhi...*), *kṛt* 'primary suffix' (3.1.93 *kṛd atiṅ*), *taddhita* 'secondary suffix' (4.1.76 *taddhitāḥ*) or *samāsa* 'compound'. Consider, for example, the following sentences.

(72) *kaṭaḥ kriyate*
'a mat is being made'

(73) *kṛtaḥ kaṭaḥ*
'a mat has been made'

(74) *śatyaḥ aśvaḥ*
'a horse bought for a hundred'

(75) *prāptodako grāmaḥ*
'a village to which water has reached'

The above examples have their objects expressed by means of a *tiṄ*, *kṛt*, *taddhita* and *samāsa* respectively. Thus, the object is expressed by the *tiṄ* affix *te* (3.4.69) in *kriyate* in (72), and by the *kṛt* affix *Kta* (3.2.101) in *kṛtaḥ* in (73). Consequently, *kaṭaḥ* in the above two examples cannot express the object by means of the second triplet of nominal ending (*-am*; 2.3.2 *karmaṇi dvitīyā*). The *taddhita* affix *yaT* (5.2.1) expresses the *karman* in *śatyaḥ* while the same is expressed by the compound *prāptodakaḥ* in (75). It is clear from the above that neither a *kāraka* nor a non-*kāraka* relationship can be expressed by a nominal ending if it has already been expressed otherwise. The domain of the nominal endings extends up to 2.3.73 *caturthī cāśiṣyāyuṣya*... The following is a select listing of rules enumerating nominal endings.

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[24] *Kāś*. II, 151: *...kenānabhihite? tiṅkṛttaddhitasamāsaiḥ... vakṣyati "karmaṇi dvitīyā" kaṭaṃ karoti. grāmaṃ gacchati... kriyate kaṭaḥ. kṛtaḥ. kaṭaḥ. śatyaḥ. śatikaḥ prāptodako grāmaḥ.*

2.3.1 *anabhihite*
'when not expressed otherwise'
2.3.2 *karmaṇi dvitīyā*
'*dvitīyā* 'second triplet' when *karman* object is not expressed otherwise'
2.3.4 *antarāntareṇa yukte*
'*dvitīyā* when *antarā* 'in between' and *antareṇa* are co-occurring'
2.3.5 *saptamīpañcamyau kārakamadhye*
'*saptamī* 'seventh triplet' or *pañcamī* 'fifth triplet' after items denoting *kāla* 'time' or *adhvā* 'space' between two *kārakas* 'participants'
2.3.6 *karmapravacanīyayukte dvitīyā*
'*dvitīyā* when a *karmapravacanīya* (1.4.83 *karma*...) co-occurs'
2.3.13 *caturthī sampradāne*
'*caturthī* 'fourth triplet' when *sampradāna* is to be expressed'
2.3.15 *tumarthāc ca bhāvavacanāt*
'*caturthī* after an item denoting *bhāva* 'action' similar to *-tumUN*'
2.3.18 *kartṛkaraṇayos tṛtīyā*
'*tṛtīyā* 'third triplet' when *kartṛ* or *karman* is not expressed otherwise'
2.3.19 *sahayukte' pradhāne*
'*tṛtīyā* after an item denoting *apradhāna* 'secondary' co-occurring with *saha* 'with'
2.3.23 *hetau*
'*tṛtīyā* when *hetu* 'cause' is to be expressed'
2.3.28 *apādāne pañcamī*
'*pañcamī* 'fifth triplet' when *apādāna* 'ablative' is to be expressed'
2.3.29 *enapā dvitīyā*
'*dvitīyā* after an item co-occurring with an item ending in *enaP* (5.3.35 *enab*...)'
2.3.32 *pṛthagvinānānābhis tṛtīyā' nyatarasyām*
'*tṛtīyā* optionally after an item co-occurring with *pṛthak* 'separate' *vinā* 'without' or *nānā* 'various'
2.3.36 *saptamy adhikaraṇe ca*
'*saptamī* also when *adhikaraṇa* 'locus' is to be expressed'
2.3.41 *yataś ca nirdhāraṇam*
'*ṣaṣṭhī* 'sixth triplet', and also *saptamī*, after an item denoting a group from among which one is singled out (*nirdhāraṇa*)'
2.3.46 *prātipadikārthaliṅgaparimāṇavacanamātre prathamā* '*prathamā* 'first triplet' when *prātipadikārtha* 'nominal stem notion' alone is to be expressed'

2.3.47 *sambodhane ca*
'*prathamā* also when *sambodhana* 'address' is to be expressed'
2.3.50 *ṣaṣṭhī śeṣe*
'*ṣaṣṭhī* when *śeṣa* 'remainder' is to be expressed'
2.3.65 *kartṛkarmaṇoḥ kṛtī*
'*ṣaṣṭhī* after an item co-occurring with an item ending in a *Kṛt* when *kartṛ* or *karman* is to be expressed'
2.3.66 *ubhayaprāptau karmaṇi*
'*ṣaṣṭhī* to express *karman* alone after an item co-occurring with another item ending in a *kṛt* when *kartṛ* and *karman* both are to be expressed'

The above select listing cites nominal endings with their semantic definitions, syntactic constraints and co-occurrence conditions. The order of enumeration is *dvitīyā, tṛtīyā, caturthī, pañcamī, saptamī, prathamā* and *ṣaṣṭhī*. Here again Pāṇini abstracts generalizations from usage and orders adjustments by means of rules which could be termed exceptions and residues. The scope of nominal endings is very wide and complex. It is wide because the endings express both *kāraka* and non-*kāraka* relations. It is complex because, in addition to the constraint of 2.3.1 *anabhihite*, the introduction of nominal endings is further constrained by syntactic, syntactico-semantic, semantic and formal co-occurrence restrictions. Consider, for example, the following sentences.

(76) *kaṭaṃ karoti*
'he is making a mat'
(77) *antareṇa puruṣakāraṃ na kiṃcīl labhyate*
'nothing can be gotten without diligent effort'
(78) *māsam adhīte*
'he studies for the entire month'
(79) *ihastho' yam iṣvāsaḥ krośāl lakṣyaṃ vidhyati*
'sitting here this archer can shoot a target at a distance of two miles'
(80) *puṣpebhyo vrajati*
'he is going for flowers'
(81) *pākāya vrajati*
'he is going to do the cooking'
(82) *putreṇa sahāgataḥ pitā*
'the father arrived with the son'
(83) *goṣu duhyamānāsu gataḥ*
'he left while the cows were being milked'
(84) *rudataḥ prāvrājīt*
'he set out to become a wandering ascetic, not heeding the cries of relatives'
(85) *rudati prāvrājīt*
'id.'
(86) *gavāṃ kṛṣṇā sampannakṣīratamā*

'among cows black are richest in milk'

(87) *goṣu kṛṣṇā sampannakṣīratamā*
'id.'

(88) *māthurāḥ pāṭaliputrakebhyaḥ āḍhyatarāḥ*
'the people of Mathurā are richer than the people of Pāṭaliputra'

(89) *rājñaḥ puruṣasya gṛham*
'the house of the king's servant'

Sentence (79) uses *dvitīyā* to express *karman*, a grammatical relation. This, in turn, becomes the general denotatum of *dvitīyā*. Pāṇini generalizes the use of *tṛtīyā, caturthī, pañcamī* and *saptamī* to express *kartṛ, karaṇa, sampradāna, apādāna* and *adhikaraṇa* respectively. Each generalization is followed by adjustments to accommodate particular usage. For example, (77) uses *dvitīyā* in *puruṣakāram* 'diligent effort' not to express *karman* but to meet the dictates of a formal co-occurrence condition characterized by the use of *antareṇa* 'without'. One may interpret this use of *dvitīyā* as one governed by *antarā* 'in between' and *antareṇa*.

The use of *tṛtīyā* in (82) similarly is governed by *saha* 'with'. Thus, *tṛtīyā* with a general denotatum of *kartṛ* and *karaṇa* may be used to meet a co-occurrence condition. Sentence (78) specifies *atyantasaṃyoga* 'continuous connection' as a condition for introducing *dvitīyā* after items denoting *kāla* 'time' or *adhvā* 'road, space'. Note that the denotatum of *dvitīyā* can be interpreted here as *atyantasaṃyoga* only with reference to time or space. However Pāṇini also provides for the introduction of either a *saptamī* or a *pañcamī* after items denoting time or space between two *kārakas*. The *pañcamī* in *krośāt* in (79) thus signifies the distance between the *kartṛ* (*iṣvāsaḥ*) and the *karman* (*lakṣya*). We already know that *caturthī* is introduced generally to denote *sampradāna* (2.3.13 *caturthī sampradāne*). However consider (80) where its use is complex. It denotes the object of an action for which another action is intended. Sentence (81) is similar. Here *caturthī* is introduced after *pāka*, a nominal stem which ends in an affix denoting action (*bhāva*) identical with the denotatum of *-tumUN*.

The use of *pañcamī* in (79) is restricted by a syntactico-semantic condition: the denotation of time and space in between two *kārakas*. The seventh triplet (*saptamī*) generally is considered to denote locus (*adhikaraṇa*: 2.3.36). However it is also used after a nominal stem whose underlying action characterizes another action. Thus, the action of going denoted by *gam* is characterized by the accompanying action of the milking of cows. Sentences (84-85) illustrate that genitive optionally can be used to signify the same, providing *anādara* 'disrespect' is denoted. This denotatum of *saptamī* and *ṣaṣṭhī* is purely notional. These endings also can be used to denote *nirdhāraṇa* 'singling out one from among many' as (86-87) exemplify. However, 2.3.41 *yataś ca nirdhāraṇam* allows *nirdhāraṇa* by either locative or genitive only when the entities from among which one is singled out are similar. For singling out one from among many dissimilar things, one must use *pañcamī*, as is clear from (88). Sentence (89) illustrates the residual use of *ṣaṣṭhī*, a residue covering what has not yet been covered by earlier rules.

The preceding information reveals some interesting features of the use of nominal endings.

(*a*) nominal endings denote both *kāraka* as well as non-*kāraka* relations,
(*b*) they do not denote a single fixed semantic or syntactic relation,
(*c*) there is certainly no one-to-one correspondence between endings and their denotata,
(*d*) rules for nominal endings generally are enumerated in the reverse order of *kāraka* rules, and
(*e*) selectional restrictions imposed on nominal endings are complex because they lexicalize diverse syntactico-semantic categories.

Considerable discussion has occurred in modern linguistics concerning the level of representation of *kārakas* and their lexicalization by means of nominal endings. Cardona[25] views the *kārakas* as constituting a level which mediates between semantic relations and actual sentences. This view essentially is correct. However, we run into problems when we try to determine whether Pāṇini's *kāraka* categories are syntactic or notional. I have already stated that nominal endings express both *kāraka* and non-*kāraka* relations. Since Pāṇini maintains a distinction between the *kāraka* and non-*kāraka* relations, and also since the non-*kāraka* relations are nothing but notional, the *kārakas* must represent a non-notional relation. Can this non-notional relation be considered grammatical? The answer must be in the affirmative.

First of all, if Pāṇini had intended his *kāraka* categories to be based on semantics, he would have done better by treating *kāraka* and *vibhakti* rules together. This would have made his description much more economical. He did not do so, however, and we can only conclude that this has a definite bearing on the nature of his theory. Secondly, his separation of *kāraka* and *vibhakti* introduces yet another distinction into his system which cannot be ignored. Pāṇini does not subscribe to the notion of a one-to-one correspondence between the categories of *kāraka* and their lexicalization by means of *vibhakti*. Finally, if Pāṇini had not sought to establish a clear-cut distinction between syntactic as opposed to notional relations, he would certainly have included notional relations in the categories he set up. The genitive, for example, is not a *kāraka* in Sanskrit. The nominative also is missing from the list of *kārakas*. These omissions are intentional. In a theory of derivation which treats action as the central denotatum of a sentence, anything which is not directly relatable to action automatically becomes secondary.

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[25] Cardona (unpublished (a)).

If it is the non-relatability of the genitive to action which deprives genitive of the status of a *kāraka*, it is the separation of the levels of *kāraka* and *vibhakti* which excludes the nominative from the status of case. Pāṇini clearly was intent upon separating lexicalization of relations from the conceptual categories of case. Confusion over the question of whéther his *kāraka* categories are semantic or syntactic has been due largely to the fact that he defines them in semantic as well as syntactic terms. Confusion also may be due to Pāṇini's employment of certain endings, which are generally considered to express non-*kāraka* relations, to express *kāraka* relations. Consider the following sentences.

(90) *mātuḥ smarati*
'he is remembering his mother'

(91) *bhavataḥ kaṭaḥ kartavyaḥ*
'the mat should be made by you'

Sentence (90) has *mātuḥ,* the *karman* of *smṛ* 'to remember', in the genitive. Sentence (91) has *bhavataḥ* a *kartṛ,* in the genitive. This makes genitive an ending expressing a *kāraka* relation (*kāraka-vibhakti*). However, this does not bring to genitive the status of a *kāraka*. Pāṇini could not afford to mix levels, as a distinction between notional and grammatical relations on the one hand, and their expression by means of nominal endings on the other is crucial to his theory of grammatical descriptions.

10

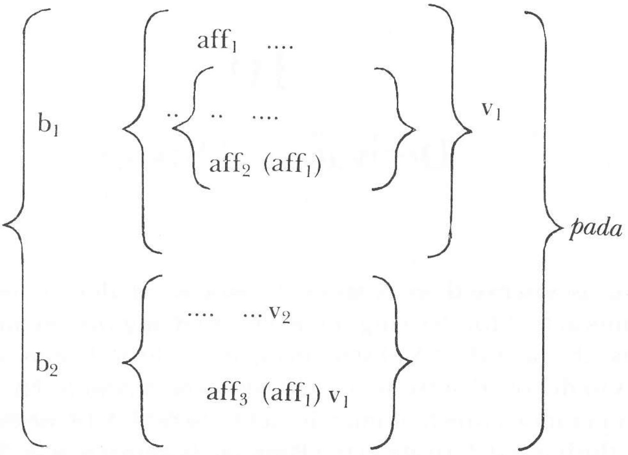
Derivational System

Pāṇini, as discussed in chapter 3, uses word derivation as the most economical tool for deriving sentences. In doing this, he makes generalizations, abstracts the *CS* of sentences, inserts lexical items and introduces affixes to denote diverse syntactico-semantic relations. He then follows a set of operations which ultimately yield a *pada* (1.4.14 *suptiṅantaṃ padam*). Thus, the highest derivate in the Pāṇinian system is a *pada*. This, however, should not give one the impression that the Pāṇinian *pada* is a morphological entity. Since a *pada* is derived with reference to the *CS* of the sentence in which it occurs, it is a syntactic unit. These units are of two types depending upon whether the *pada* ends in a *sUP* (4.1.2 *svaujas...*) or in a *tiṄ* (3.4.78 *tiptasjhi...*).

The operational aspect of the Pāṇinian derivative system focuses mainly on bases (*prakṛti*), affixes (*pratyaya*) and subsequent operations (*kārya*). Bases form the primary input in the grammar. They are of two kinds, *dhātu* 'verb root' and *prātipadika* 'nominal stem.' Roots and nominal stems are also of two types, basic as well as derived. Basic roots are those which have been enumerated in the *DP*. The *GP* has a listing of basic stems. Derived roots are those which end in affixes *saN*, etc. (3.1.32 *sanādyantā dhātavaḥ*). Compounds (*samāsa*) and items which end in affixes *kṛt* (3.1.93 *kṛd atiṅ*) and *taddhita* (4.1.76 *taddhitāḥ*) constitute the derived nominal bases. I shall use the term base-input to refer to nonderived bases. The affixes which Pāṇini manipulates to derive bases and *padas* are *kṛt*, *taddhita*, *strī* 'feminine' (4.1.3 *striyām*), *sUP* and *tiṄ*. The last two are referred to as *vibhakti* (1.4.103 *vibhaktiś ca*).

The following schema shows the types of forms derivable in Pāṇini; one must read across taking one item at a time.
The key to the symbols is as follows:

b_1 = *prātipadika*
b_2 = *dhātu*
v_1 = *sUP*
v_2 = *tiṄ*
aff_1 = *strīpratyaya*
aff_2 = *taddhita*
aff_3 = *kṛt*



The above schema will yield seven combinations.

1. $b_1 + v_1$
2. $b_1 + aff_1 + v_1$
3. $b_1 + aff_2 + v_1$
4. $b_1 + aff_2 + aff_1 + v_1$
5. $b_2 + v_2$
6. $b_2 + aff_3 + v_1$
7. $b_2 + aff_3 + aff_1 + v_1$

I shall illustrate the Pāṇinian derivational process by systematically discussing the derivational history of the above seven types of derivates. Additionally, some highly complex derivations will be taken up to further support our observations. A set of derivational conventions will be presented along the way. The symbols I shall use, in addition to those already discussed, are as follows.

+ concatenation
input on left of the arrow
($x \rightarrow y$) x becomes y
= output on right of the arrow
# marks the process of reference
(*AD*) *aṅga* domain
(*CD*) controlling domain
(*OD*) obligatory domain
(*PD*) *pada* domain

Capitalised symbols not enclosed in ( ) are dummy symbols (*its*); they are later realized as zero.

Pāṇinian word derivation starts with a nominal stem (*prātipadika*) or a verbal root (*dhātu*) as its base-input and terminates with the derivation of a word (*pada*). The following is the derivational history of two Sanskrit sentences with two words each.

(1) *kumāraḥ* / (2) *kumārī* (3) *pacati*
'the boy / girl cooks'

kumāraḥ 'the boy'	*kumārī* 'the girl'	*pacati* 'cooks'
(a) *kumāra*→	*kumāra* →	*pac* →
1.2.45 (*CD*)	1.2.45 (*CD*)	1.3.1 (*CD*) *bhūvadayo...*
arthavad ...	4.1.1 (*OD*)	3.1.91 (*OD*) *dhātoḥ*
4.1.1 (*OD*) *ṅyāp...*	4.1.3 *striyām*	3.2.123 *vartāmane laṭ*
4.1.2 *svaujas...*	4.1.20 *vayasi...*	
# 1.4.100 *tiṅas...*		
1.4.22 *dvyekayor...*		
1.4.101 *tāny eka...*		
1.4.102 *supaḥ*		
1.4.103 *vibhaktiś ca*		
2.3.46 *prātipadikārtha...*		
= *kumāra* + *sU*	= *kumāra* + *ṄīP*	= *pac* + *LAṬ*→
(b) *kumāra* + *sU*→	(b) *kumāra* + *ṄīP*	(b) *pac* + *LAṬ*
1.3.2 (*CD*) *upadeśe...*	1.3.8 (*CD*) *laśakv...*	3.4.69 *laḥ...*
1.3.9 *tasya...*	1.3.9	3.4.77 *lasya*
		3.4.78 *tiptasjhi...*
		1.4.99 *laḥ parasmai*
		1.4.100-102 (*CD*)
+ *kumāra* + *s*→	= *kumāra* + *ī*	= *pac* + *tiP*
1.4.13 *yasmāt...*	*kumāra* + *ī*	
6.4.1 *aṅgasya* (*AD*)	1.4.13 (*CD*)	
	6.4.1 (*AD*)	
	6.4.129 *bhasya*	(*c*) *pac* + *tiP*
	# 1.4.18 *yaci...*	
	6.4.148 *yasyeti...*	1.3.3 (*CD*) *halantyam*
		1.3.9 *tasya...*
= *kumāra* + *s*	= *kumār* (*a* → ∅) + *ī*	= *pac* + *ti*
	= *kumārī*	
(c) *kumāra* + *s*	*kumārī* + *sUP*	*pac* + *ti*→
1.4.14 *suptiṅ...* (*CD*)		3.4.113 *tiṅśit...*
8.1.16 *padasya* (*P*)		3.1.68 *kartari...*
8.2.66 *sasajuṣo ...*		*an instance of
	kumārī + s (*UP* → ∅)	reverse scanning
= *kumāra* + *rŨ*	= *kumārī* + *s*	
(d) *kumāra* + *rŨ*		= *pac* + *ŚaP* + *ti*
1.3.2 (*CD*)	*kumārī* + *s*	
1.3.9	1.2.41 *apṛkta* ... (*CD*)	6.1.68 *halṅyā...*
= *kumāra* + *r*		= *pac* + *ŚaP* + *ti*
8.3.15 *khara-*	= *kumārī* + (*s* → ∅)	1.3.3
vasānā...	= *kumārī*	1.3.8
		1.3.9

= *kumāraḥ*	= *kumārī*	*pac* + *a* + *ti*
		= *pacati*

The preceding is a generalized listing of rule applications which turns *kumāra* 'boy' and *pac* 'cook' into *kumārah* and *pacati* so that we could realize the sentence *kumāraḥ pacati*. If we compute the ordering of domains manipulated above, we find the following.

kumāraḥ CD + OD + CD + ... + CD + AD + PD
pacati CD + OD + CD + OD + CD + PD

This suggests that the grammar undertakes derivations by applying rules in the controlling domain and terminates the derivations by applying rules in the *pada* domain. Constant reference is made to the controlling domain. The application of rules in the above schema is adopted from the traditional descriptions. However, even a cursory look at the derivative stages of *kumāraḥ* and *pacati* poses the following questions.

How is the derivative mechanism activated?

What prompts access to or exit from various domains and interior domains?

What traffic rules and scanning conventions are optionally or obligatorily followed to arrive at the terminal string?

How do we know which rules are going to apply to a given string?

A thorough examination of a complete derivational history of various forms enables us to arrive at certain important generalizations regarding the functioning of this model.

4. This model cannot be manipulated unless the *CS* is clearly specified. The basic content units in the *CS* must be matched by available items in the lexicon and a selection must be made.
5. The selected lexical items are then passed on to the *CD* for identification in terms of definitions. Such defined lexical items are then recognized as base-inputs and only then are charged with the function of activating the derivation mechanism.
6. Base-inputs must gain access to the *OD* where the definitional terms of these inputs must prompt access to an interior domain. Outputs of this as well as other domains are again subjected to definitional identifications since only definitions can prompt access to or signal the possibilities of further rule applications in a domain for all subsequent operations.

In deriving *kumāraḥ* and *pacati*, we selected *kumāra* 'boy' and *pac* 'to cook' from the lexicon in accordance with a *CS* which can be outlined as *x* does *y* at a given time *z*. The *CD* identifies them as *prātipadika* 'nominal stem' and *dhātu* 'verb root' respectively. When used as an input to the *OD*, *kumāra* is prompted access to the interior domain headed by 4.1.1 *ṅyāp-prātipadikāt* 'after that which ends in *Ṅī*, *āP* or else is a nominal stem'. On the other hand, *pac* is prompted access to the interior domain headed by rule 3.1.91

dhātoḥ 'after that which is a verb root'. This access is justified since these governing rules contain the definitional terms *prātipadika* and *dhātu* which have been used to identify the inputs.

At this stage, 4.1.2 *svaujas...* becomes applicable in case of *kumāra*. Similarly after 3.1.123 *vartamāne laṭ* has introduced the *LAṬ* affix, rules 3.4.77-78 *lasya-tiptasjhi...* apply to *pac** + *LAṬ*. However, a serious problem is encountered by these strings in the selection of elements enumerated here. Rule 4.1.2 enumerates a set of twenty-one elements (abbreviated *sUP*); 3.4.78 enumerates eighteen (abbreviated *tiṄ*) which replace *LA* members. How and why should we choose one element out of all these?

A referential index (see chapter 4 for details) of *sUP* and *tiṄ* brings rules relating to *parasmaipada* and *ātmanepada*, *kāraka* and *vibhakti* and *LA* placement and operation close to rules enumerating *sUP* and *tiṄ*. As a result, we can select *sU* after *kumāra* and *tiP* after *pac* where the former is a nominal inflection expressing the nominal stem notion (*prātipadikārtha*) and the latter is a verbal inflection which replaces *LAṬ* and expresses the agent (*kartṛ*). These applications yield the following string:

kumāra + *sU pac* + *tiP*

The symbols indicated by capital letters are what Pāṇini termed *it*. Pāṇini has manipulated such symbols for various metalinguistic purposes. Once they have executed the function they are charged with, they get deleted by 1.3.9 *tasya lopaḥ* 'non-appearance of that which is an *it*'. The *U* in *sU* and the *P* in *tiP* are termed *it* by rules 1.3.2-3 and are subsequently deleted by 1.3.9, yielding *kumāra* + *s pac* + *ti*.

Since *it*-deletion is a fairly regular phenomenon, we shall propose the following convention.

7. Base-inputs containing items designated as *it* must undergo *it*-deletion. Furthermore, if any new form is introduced either as a substitute or an addition, it must also be examined for possible *it*-deletion.

For further explanations in the derivational history of this string, I shall take *kumāra* + *s* and *pac* + *ti* separately. In order to proceed to the next stage of derivation, we have to scan through the *CD*.

8. Scanning the *CD* takes precedence whenever: access to or exit from a domain is sought; a rule containing a technical term or its denotations becomes applicable; or a rule application has been accomplished.

When we scan this domain with our string *kumāra* + *s*, we find that the definition *apṛkta* is applicable in case of *s*. Our scanning for a rule containing the definitional term *apṛkta* starts with 6.1.1 since there is no domain which contains it in its governing rule, and the section of the grammar beginning with 6.1.1 immediately follows the obligatory domain which yielded this string. Since this scanning did not offer any rule application, it is necessary to return to the *CD*.

Aṅga is the next definition. It requires that this string be sent to the *aṅga* domain which is governed by a rule that contains this definitional term. Scanning through this domain reveals that no rules can be applied, and thus recourse is again taken to the controlling domain, where our string is identified as a *pada*. This prompts access to our last domain where, by the application of 8.2.66, the *s* is replaced by *rU*. After *it* -deletion of *U*, the *r* is changed into *ḥ* by 8.3.15. Thus *r* → *ḥ* and we obtain the terminal string *kumāraḥ*, a *pada*.

As is obvious from the preceding discussion, recourse to the *CD* occurs more than once. This must be the case since this domain contains definition and interpretation rules which signal the direction a particular derivation has to follow. Also whenever the process of reference is triggered, this is the domain which finally resolves problems regarding rule application. It is imperative then that any discussion about the derivational mechanism of this grammar must include precise statements concerning recourse to this domain. I have already outlined conditions under which this domain takes precedence. As far as scanning is concerned, the following conventions apply.

9. Each time recourse is taken to this domain, scanning starts with the first rule and terminates with the last. Also, whenever a particular definition is selected to be in force, all of its denotations, exceptions, together with other operation rules related to it, become operative.

Stage (b) of the preceding derivation poses a procedural question. Our string was sent to the *aṅga* domain upon the occurrence of the *aṅga* definition, but there was no rule application. Doesn't this lack of rule application render this a vacuous step? We have to remember here that the definitional device of sending inputs to appropriate domains for possible rule application is a general device. It does not guarantee rule application in every case. However, failure to observe this ,convention necessarily involves risks. For example, let us take the derivational history of *kumārī* 'girl' which underlies the same base-input and accordingly is sent to the same interior domain of 4.1.1. Rule 4.1.2 does not apply to this since our intent is different. Instead, 4.1.20 prescribes the feminine suffix *ṄīP*. After *it*-deletion we are left with the string *kumāra* + *ī*, which is identified as an *aṅga*. When prompted access to the *aṅga* domain, 6.4.148 applies and causes deletion of the terminal *a* in *kumāra*. Incidentally, 6.4.148 is contained in the interior domain headed by 6.4.129 *bhasya*. Does our string meet the requirements of being called a *bha*? This again is an instance where only recourse to the process of reference could resolve the problem. That is, tracing the term origin *bha* would lead us to the *CD* where 1.4.18 will furnish the required information. The output at this stage is *kumār* + *ī* = *kumārī*.

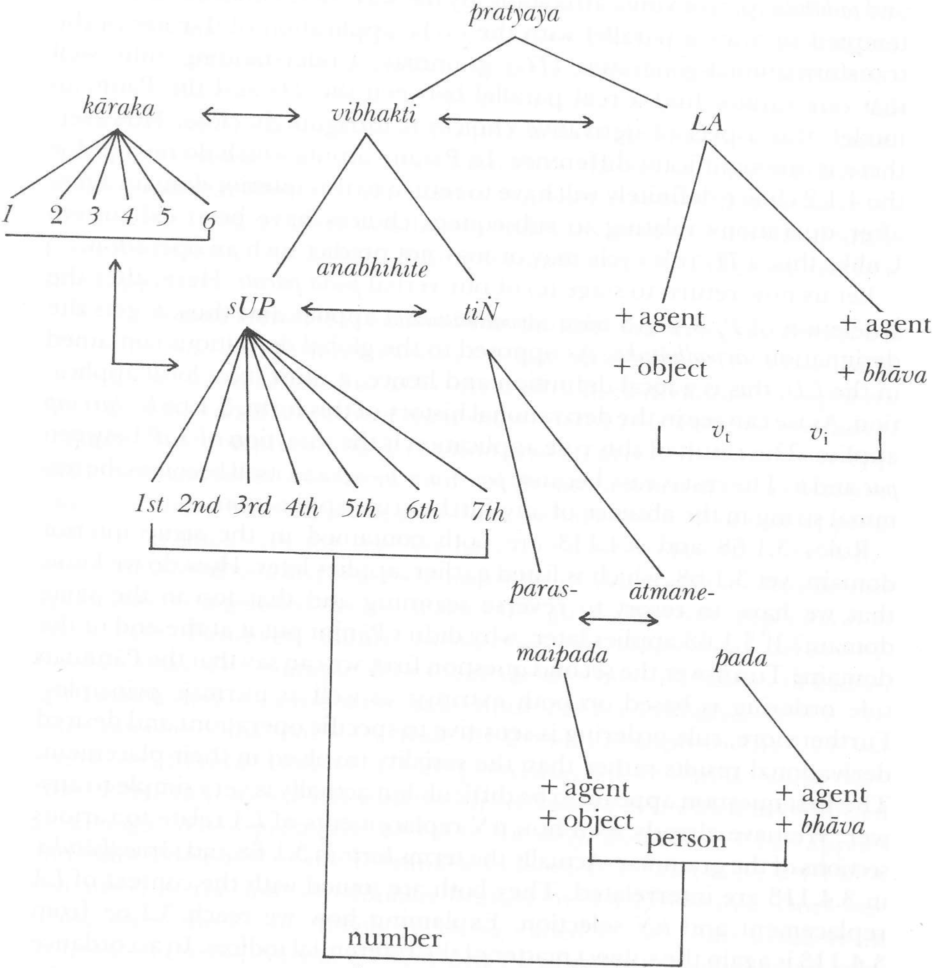
This output is sent to the 4.1.1 domain and 4.1.2 results in the selection of *sU* which undergoes *it*-deletion. The *s* is then defined as an *apṛkta* and is finally deleted by 6.1.68. After all regular steps are taken with *kumārī* and the absence of any further rule application noted, it is recognized as a *pada*. It is interesting to note here that the 4.1.1 domain offers derivative choices to its inputs in such a way that if the option offered by 4.1.2 is not used by the base-inputs, the later options would yield an output that will have to be sent to this domain again (of course, after all operations regarding those choices have been exhausted). The choices are *sUP*, feminine and *taddhita* (patronymic) affixation. By the way these choices work, one is tempted to draw a parallel with the cyclic application of T-rules in the transformational-generative (*TG*) grammar. Understanding fully well that one cannot find a real parallel between the *TG* and the Pāṇinian model, this aspect of derivative choices is intriguingly close. However, there is one significant difference. In Pāṇini, inputs which do not opt for the 4.1.2 choice definitely will have to return to this interior domain again after operations relating to subsequent choices have been exhausted. Unlike this, a *TG* rule cycle may or may not predict such an operation.

Let us now return to stage (c) of our verbal *pada pacati*. Here, after the *it* deletion of *P*, 3.4.113 *tiṅśit sārvadhātukam* applies and thus, *ti* gets the designation *sārvadhātuka*. As opposed to the global definitions contained in the *CD*, this is a local definition and hence, it must have local application. As we can see in the derivational history of this form, 3.1.68 *kartari śap* applies. The result of this rule application is the insertion of *ŚaP* between *pac* and *ti*. The rest is easy because *pac* + *a* + *ti* → *pacati* itself becomes the terminal string in the absence of any further rule application.

Rules 3.1.68 and 3.4.113 are both contained in the same interior domain, yet 3.1.68, which is listed earlier, applies later. How do we know that we have to resort to reverse scanning and that too in the same domain? If 3.1.68 applies later, why didn't Pāṇini put it at the end of the domain? To answer the second question first, we can say that the Pāṇinian rule ordering is based on both extrinsic as well as intrinsic principles. Furthermore, rule ordering is sensitive to specific operations and desired derivational results rather than the seriality involved in their placement. The first question appears to be difficult but actually is very simple to answer. We have already seen how *tiṄ* replacements of *LA* relate to various sections of the grammar. Actually the terms *kartṛ* in 3.1.68 and *sārvadhātuka* in 3.4.113 are interrelated. They both are joined with the context of *LA* replacement and *tiṄ* selection. Explaining how we reach 3.1.68 from 3.4.113 is again the subject matter of the referential indices. In accordance with the convention we have already discussed, the term origin *sārvadhātuka* must be traced. It is interesting to note that for the application of 3.1.68, *sārvadhātuka* is one of the required conditions.

It has been explained in connection with the selection of *sUP* and *tiṄ* that proper selection requires retrieving necessary information from elsewhere by means of referential indices. *Sūtras* brought close to the context of rules 4.1.2 and 3.4.78 share a surprisingly high degree of interdependency. It establishes beyond doubt that the selection of *sUP* and *tiṄ* is made not only with reference to each other but also with reference to the *CS* of sentences. The following flow chart reveals some important aspects of this interdependency.

10.


pratyaya
kāraka
vibhakti
LA
1 2 3 4 5 6
anabhihite
sUP
tiṄ
+ agent
+ object
+ agent
+ bhāva
v_t v_i
1st 2nd 3rd 4th 5th 6th 7th
paras-
maipada
ātmane-
pada
+ agent
+ object
+ agent
+ bhāva
person
number

dependency in selection

Key:

v_t verb transitive

v_i verb intransitive

Note here that interdependency is relatively more abstract on the higher level. For example, *kāraka* categories are basically abstract. The *LA* affixes are comparatively less abstract. The denotata of the *kārakas* are expressed by means of *vibhaktis* and other affixes. The *LA* affixes are similarly destined to be replaced by *tiṄ*. Pāṇini formulates 2.3.1 *anabhihite* to safeguard against multiple expression of syntactic relations. It also serves as a device to indicate derivational options available to a string. The question now arises whether a *sUP*, *tiṄ* or some other affix should first express a given *kāraka* relation. It is my understanding that a nominal ending does not have a choice of expressing a given *kāraka* relation first. This understanding is based on the following two points.

11. The Pāṇinian derivational schema operates with reference to the *CS* of sentences. Since the central denotatum of a sentence is action and also since action is denoted by a verb root, it alone has the first option of expressing a *kāraka* relation.
12. The restriction of 2.3.1 *anabhihite* is imposed upon the selection of *sUP*. Naturally, *sUP* cannot avail itself of the first option to express a given *kāraka* relation.

I shall now discuss the derivational history of five *taddhita* derivates which illustrates the complexity of derived nominals and reveals some interesting aspects of the Pāṇinian derivational system.

13. *gārgiḥ* 'direct descendant of Garga'

(*a*) *garga* → 1.2.45 *arthavad ...*
4.1.1 *ṅyāp...*
4.1.76 *taddhitāḥ*
4.1.82 *samarthānām...*
4.1.83 *prāg dīvyato' ṇ*
4.1.95 *ata iñ*
4.1.92 *tasyāpatyam*
= *garga* + *Ṅas* + *iÑ*

(*b*) *garga* + *Ṅas* + *iÑ* → 1.2.46 *kṛttaddhita...*
2.4.71 *supo...*
= *garga* + (*Ṅas* → ∅) + *iÑ*
= *garga* + *iÑ*

(*c*) *garga* + *iÑ* → 1.3.3 *halantyam*
1.3.9 *tasya*
= *garga* + *i*(*Ñ* → ∅)
= *garga* + *i*

(*d*) *garga* + *i* → 1.4.13 *yasmāt...*
6.4.1 *aṅgasya*
6.4.129 *bhasya*
6.4.148 *yasyeti ca*
= *garg*(*a* → ∅) + *i*
= *garg* + *i*

(*e*) *garg + i*	→ 7.2.117 *taddhitesv...*
	# 1.1.1 *vṛddhir...*
	= *g(a → ā) rg + i*
	= *gārgi*
(*f*) *gārgi*	→ 1.2.46 *kṛttaddhita...*
	4.1.1 *ṅyāp...*
	4.1.2 *svaujas...*
	= *gārgi + sU...*
	= *gārgiḥ*

The affix *iÑ* in the above derivation has been introduced after *garga* + *Ṅas*, a *pada*. This may not seem proper in view of 4.1.1 which serves as a heading rule (*adhikāra*) in rules dealing with *taddhita* affixes. Normally one would expect a nominal stem, or a form ending in feminine affix (*Ṅī, āP*), to be the input. The requirement that a *pada* should form the input is laid down by 4.1.82 *samarthānāṃ prathamād vā* where *samartha* refers to a syntactically related *pada*. That this *pada* should end in the genitive is inferred from the variable reference (*tasya* of 4.1.92 *tasyāpatyam*). This rule also specifies the denotatum of affix *aṆ* to which *iÑ* is an exception. Incidentally, since a nominal *pada* is derived by introducing *sUP* after a nominal stem, and the introduction of *sUP* is made by 4.1.2 which is governed by 4.1.1, the question of an improper input for affix *iÑ* does not arise.

The derivation of *garga* + *Ṅas* is not shown here because that string is inferred from 4.1.92. Rule 4.1.82 specifies that relevant affixes are to be introduced after the first among the syntactically related *padas*. What constitutes the second *pada*? The answer is *apatya* + *sU*, an inference again based on 4.1.92. This rule allows the introduction of an affix after the first among the syntactically related *padas*. That is, the affix must be introduced after *garga* + *Ṅas*, and not after *apatya* + *sU*. What if one switches the order? Can the affix be introduced after *apatya* + *sU* of *aptya* + *sU* + *garga* + *Ṅas*? No, since the relative order of syntactically related *padas* is given by 4.1.92 itself. Since *tasya* in 4.1.92 *tasyāpatyam* is referenced first in the rule, its antecedent, i.e., a *pada* ending in genitive, alone should be treated as the first *pada*. The application of other rules in the derivation of *gārgiḥ* is easy to follow.

The word *gārgiḥ* refers to a direct (*anantara*) descendant of *garga*. A non-direct descendant such as a grandson, etc., is referred to as *gotra* (4.1.162 *apatyaṃ pautraprabhṛti gotram*). A *gotra* descendant of *garga* is (14) *gārgya*. It is derived by introducing the affix *yaÑ* (4.1.105 *gargādibhyo yañ*) after *garga* + *Ṅas*, a *pada* syntactically related to *apatya* + *sU*. Rules similar to those used in deriving *gārgiḥ* apply in deriving *gārgyaḥ* from (*garga* + *Ṅas* + *yaÑ*) + *sU*. The following is the derivational history of *gārgī*, a female descendant of *garga*.

15. *gārgī*
(*a*) *gārgya* → 1.2.46 *kṛttaddhita...*
4.1.1 *ṅyāp...*
4.1.3 *striyām*
4.1.16 *yañaś ca*
= *gārgya* + *ṄīP*
(*b*) *gārgya* + *ṄīP* → 1.3.3 *halantyam*
1.3.8 *laśakv...*
1.3.9 *tasya...*
= *gārgya* + (*Ṅ* → ∅) *ī*(*P* → ∅)
gārgya + *ī*
(*c*) *gārgya* + *ī* → 1.4.13 *yasmāt...*
6.4.1 *aṅgasya*
6.4.148 *yasyeti ca*
= *gārgy* (*a* → ∅) + *ī*
= *gārgy* + *ī*
(*d*) *gārgy* + *ī* → 6.4.150 *halas taddhitasya*
= *gārg* (*y* → ∅) + *ī*
= *gārgī*
(*e*) *gārgī* → 1.2.46 *kṛttadhita...*
4.1.1 *ṅyāp...*
4.1.2 *svaujas...*
= *gārgī* + *sU*
(*f*) *gārgī* + *sU* → as in (2) *kumārī*
= *gārgī* + (*sU* → ∅)
= *gārgī*

The derivational history of *gārgī* offers nothing new, especially when one compares it with *gārgiḥ* and *gārgya*. However, some interesting conclusions can be drawn as a result of this comparison. I shall return to these conclusions after one more derivation.

16. *gārgyāyaṇaḥ* 'a young male *gotra* descendant of *garga*'
(*a*) *garga* → same as in *gārgya*
= *gārgya*
(*b*) *gārgya* → 4.1.1 *ṅyāp...*
4.1.82 *samarthānāṃ*
4.1.93 *tasyāpatyam*
4.1.94 *gotrād yūny astriyām*
4.1.162 *apatyaṃ pautraprabhṛti...*
4.1.163 *jīvati tu vaṃśye yuvā*
4.1.101 *yañiñoś ca*
= *gārgya* + *phaK*
(*c*) *gārgya* + *phaK* → same as in step (b) of *gārgya*
= *gārgya* + *pha* (*K* → ∅)
= *gārgya* + *pha*

(*d*) *gārgya* + *pha* → 1.4.13 *yasmāt...*
6.4.1 *aṅgasya*
6.4.148 *yasyeti ca*
= *gārgy* (*a* → ∅) + *pha*
= *gārgy* + *pha*

(*e*) *gārgy* + *pha* → 7.1.2 *āyaneyīnī...*
1.3.10 *yathāsaṃkhyam...*
= *gārgy* + (*pha* → *āyana*)
= *gārgyāyana*

(*f*) *gārgyāyana* → as in steps (e-f) of *gārgiḥ*
= *gārgyāyana* + *s*

(*g*) *gārgyāyana* + *s* → same as in (b-d) of *kumāraḥ*
= *gārgyāyanaḥ*

(*h*) *gārgyāyanaḥ* → 8.4.2 *aṭkupv...*
= *gārgyāya* (*n* → *ṇ*) *aḥ*
= *gārgyāyaṇaḥ*

The application of rules in *gārgyāyaṇaḥ* is relatively complex. The affix *phaK* is introduced to denote *yuvāpatya* 'young *gotra* descendant' (recall that *gotra* refers to grandsons, etc., cf. 4.1.162). A *yuvāpatya* is also a *gotra* descendant though with certain restrictions. *Garga's* sons, for example, will be *gārgi* and their sons will be referred to as *gārgya*. The sons of a *gārgya* will also be called *gārgya*, signifying *gotra* descendants of *garga*. However, a *gotra* descendant can be referred to as *yuvāpatya* when his father or uncles, etc., (*vaṃśya*), are alive (4.1.163 *jīvati tu vaṃśye yuvā*). The *yuvāpatya* designation can also be extended to a younger brother when the older brother is alive, providing of course that the father and uncles are not alive (4.1.164 *bhrātari ca jyāyasi*. Thus, *gārgyāyaṇaḥ* is *yuvāpatya* when *gārgya* is alive. He can also be called *yuvāpatya* when his older brother is alive.

Two rules must be discussed in this connection: 4.1.93 *eko gotre* and 4.1.94 *gotrād yūny astriyām*. The first rule states that only one affix should be introduced to denote a *gotra* descendant. By inference, the base (*prakṛti*) must also be the first base. That is, an affix denoting a *gotra* descendant of *garga* should be introduced after *garga*, and not after *gārgi*. The second rule makes an exception with regard to a *yuvāpatya*. It specifies that an affix denoting a non-feminine *yuvāpatya* should be introduced after the base which denotes a *gotra*. Thus, *gārgyāyaṇaḥ* is derived by introducing *phaK* after *gārgya*, not after *garga* or *gārgi*. Note that a feminine *yuvāpatya* cannot be derived in this manner; one must introduce the feminine affix *ṄīP* to derive (17) *gārgyāyaṇī*, a female *yuvāpatya* of *garga*.

The following is a schematic representation of derivational types already discussed. I have included major rules with corresponding examples for convenience.

1. (4.1.1 (4.1.2)) = *kumāraḥ*
2. (4.1.1 (4.1.3 (4.1.1 (4.1.2)))) = *kumārī*

14. (4.1.1 (4.1.2 (4.1.76 (4.1.82 (4.1.92-93))))) = *gārgyaḥ*
15. (4.1.1 (4.1.2 (4.1.76 (4.1.82 (4.1.92))))) = *gārgiḥ*
16. (4.1.1 (4.1.2 (4.1.76 (4.1.82 (4.1.92 (4.1.94)))))) = *gārgyāyaṇaḥ*
17. (4.1.1 (4.1.2 (4.1.76 (4.1.82 (4.1.92 (4.1.94 (4.1.1 (4.1.3)))))))) = *gārgyāyaṇī*

The above conflations, except for the first, have one thing in common: their output must form an input to the first. That is, a derivational cycle beginning at 4.1.1 must complete at 4.1.2. The derivational options offered by 4.1.3 and 4.1.76 are internal to 4.1.1. As a consequence, the derivational cycles beginning with 4.1.3 and 4.1.76 must complete at 4.1.1. Rule 4.1.76 branches off into its own internal options; I have illustrated only one of them by 4.1.82. Rules 4.1.92, 4.1.93 and 4.1.94 offer options internal to 4.1.82. The output of 4.1.76 may technically form an input to 4.1.3 in which case the cycle must again complete at 4.1.1. An internal cycle which completes at 4.1.1 and accepts the option offered by 4.1.2 produces the final derivate. The above schema outlines six options internal to 4.1.1. The first option produces the final derivate. The remaining five options must complete their cycle at 4.1.1. The first option cancels out the other two; the second cancels the third; the third option alone offers a full range of derivational choices.

The above derivational options are built around the nominal stem (*prātipadika*) as base-input. I have already discussed the derivational history of *pacati* which takes a verb root (*dhātu*) as its input. The following derivations are also built around verb roots as base input. Consider *pācaka* 'cook', *pācikā* 'female cook' and *kumbhakāraḥ* 'pot maker'.

18. *pācaka* 'cook'

(*a*) *pac* → 1.3.1 *bhūvādayo...*
3.1.91 *dhātoḥ*
3.1.93 *kṛd atiṅ*
3.1.95 *kṛtyāḥ*
3.1.133 *ṇvultṛcau*
= *pac* + *ṆvuL*

(*b*) *pac* + *ṆvuL* → 1.3.3 *halantyam*
1.3.7 *cuṭū*
1.3.9 *tasya lopaḥ*
= *pac* + (*Ṇ* → ∅) *vu*(*L* → ∅)
= *pac* + *vu*

(*c*) *pac* + *vu* → 1.4.13 *yasmāt...*
6.4.1 *aṅgasya*
7.1.1 *yuvor anākau*
1.3.10 *yathāsaṃkhyam...*
= *pac* + (*vu* → *aka*)
= *pac* + *aka*

(*d*) *pac* + *aka* → 7.2.116 *ata upadhāyāḥ*

# 1.1.1 *vṛddhir...*
= *p* (*a* → *ā*) *c* + *aka*
= *pācaka*
(*e*) *pācaka* → same as in *kumāraḥ*
= *pācaka* + *sU*
= *pācakaḥ*

19. *pācikā* 'female cook'

(*a*) *pācaka* → 1.2.46 *kṛttaddhita*
4.1.1 *ṅyāp...*
4.1.3 *striyām*
4.1.4 *ajādyatas...*
= *pācaka* + *ṬāP*
(*b*) *pācaka* + *ṬāP* → 1.3.3 *halantyam*
1.3.7 *cuṭū*
1.3.9 *tasya...*
= *pācaka* + (*Ṭ* → ∅) *ā* (*P* → ∅)
= *pācaka* + *ā*
(*c*) *pācaka* + *ā* → 1.4.13 *yasmāt...*
6.4.1 *aṅgasya*
7.3.44 *pratyayasthāt...*
= *pāc* (*a* → *i*) *ka* + *ā*
= *pācika* + *ā*
(*d*) *pācika* + *ā* → 6.1.101 *akaḥ savarṇe...*
pācik (*a* + *a* → *ā*)
= *pācikā*
(*e*) *pācikā* → 4.1.1 *ṅyāp...*
4.1.2 *svaujas...*
# 1.4.102 *supaḥ*, etc.
= *pācikā* + *sU*
(*f*) *pācikā* + *sU* → 1.3.2 *upadeśe...*
1.3.9 *tasya...*
= *pācikā* + *s* (*U* → ∅)
= *pācikā* + *s*
(*g*) *pācikā* + *s* → 1.2.41 *apṛkta...*
6.1.68 *halyṅyābhyo...*
= *pācikā* + (*s* → ∅)
= *pācikā*
(*h*) *pācikā* → 1.4.14 *suptiṅantam...*
1.1.62 *pratyayalope...*
= *pācikā*

The above two forms are derived by introducing the *kṛt* affix *ṆvuL* after the verbal root *pac*. The second form is the feminine counterpart of the first. Rule application in these derivations is fairly straightforward. Deriving *pācaka* from *pac* + *ṆvuL* basically entails two operations: replacement of *vu* by *aka* and the *vṛddhi* of the penultimate (*upadhā*) *a* of *pac*. The second form requires the introduction of the feminine affix *ṬāP* followed by homogenous (*savarṇa*) long vowel replacement for *a* + *a*. I shall return to these derivations after a discussion of *kumbhakāraḥ*.

20. *kumbhakāraḥ*

(*a*) *ḌUkṛÑ* → 1.3.1 *bhūvādayo...*
1.3.3 *halantyam*
1.3.5 *ādirñiṭuḍuvaḥ*
1.3.9 *tasya,...*
= (*ḌU* → ∅) *kṛ* (*Ñ* → ∅)
= *kṛ*

(*b*) *kṛ* → 3.1.91 *dhātoḥ*
3.2.1 *karmaṇy aṇ*
3.1.92 *tatropapadam...*
= *kumbha* + *ām* + *kṛ* + *aṆ*

(*c*) *kumbha* + *ām* + *kṛ* + *aṆ* → 1.3.3 *halantyam*
1.3.9 *tasya...*
= *kumbha* + *ām* + *kṛ* + *a*

(*d*) *kumbha* + *ām* + *kṛ* + *a* → 1.4.13 *yasmāt...*
6.4.1 *aṅgasya*
7.2.115 *aco'ñṇiti*
= *kumbha* + *ām* + *k* (*ṛ* → *ār*) + *a*
= *kumbha* + *ām* + *kāra*

(*e*) *kumbha*+*ām* + *kāra* → 2.2.19 *upapadam atiṅ*
1.2.46 *kṛttaddhita...*
2.4.71 *supo...*
= *kumbha* + (*ām* → ∅) + *kāra*
= *kumbhakāra*

(*f*) *kumbhakāra* → as in *kumāraḥ*
= *kumbhakāra* + (*sU* → *ḥ*)
= *kumbhakāraḥ*

The derivation of *kumbhakāraḥ* is highly complex. First, its two constituents, *kumbha* + *ām* and *kāra* + *sU*, are combined to produce an obligatory compound. Second, *kāra* is derived by introducing affix *aṆ* under the condition of a *pada*, namely *kumbha* + *ām*, which denotes *karman* 'object' and serves as an *upapada* 'co-occurring *pada*.' Finally, the complexity of this derivation increases because the rule which derives *kāra* from

ḌUkṛṆ + *aṆ*, 3.2.1 *karmaṇy aṇ*, is contained in the second quarter of the third book. Furthermore, the denotatum of the conjoined *pada* has been specified as *karman*. This necessitates bringing related rules to the context of 3.2.1 *karmaṇy aṇ*.

The process of retrieving related rules begins with the locative singular word *karmaṇi* of 3.2.1. This rule is contained within the domain of 3.1.91 *dhātoḥ* whose functional context contains 3.1.92 *tatropapadam saptamīstham*. The variable reference *tatra* specifies that an item in the locative in this domain of 3.1.91 should be construed as an *upapada*. The obligatory compound of *kumbha* + *ām* + *kāra* is allowed by 2.2.19 *upapadam atiṅ*. One can now see how the locative in *karmaṇi*, with its antecedent *upapada* and the term *karman*, brings rules from the *kāraka*, *vibhakti* and *samāsa* sections close to the context of 3.2.1. Since the term *upapada* in 2.2.19 is referenced with *prathamā* 'nominative', *kumbha* + *ām* must be treated as *upasarjana* 'secondary' (1.2.43 *prathamānirdiṣṭam...*) and hence, be placed first in the compound as is required by 2.2.30 *upasarjanaṃ pūrvam*. The following schema reveals the complexity of this derivation.

karman (1.4.49 *kartur...*; 2.3.2
karmaṇi dvitīyā, etc.)
upasarjana (2.2.30 *upasarjanam ...*)
(2.2.19 *upapadaṃ atiṅ*)
(1.2.43 *prathamā...*)
kartṛ (1.4.54 *svatantraḥ...*)
karman (3.2.1 *karmaṇy aṇ*)
upapada (3.1.92 *tatropapadam...*)
kartṛ (3.4.67 *kartari...*)
samāsa (2.1.4 *prāk...*)
(2.1.1 *samarthaḥ...*)
.
.
.
(2.1.22 *tatpuruṣaḥ*)
(2.2.19 *upapadam...*)
(2.2.30 *upasarjanam...*)
(1.2.46 *kṛttaddhita...*)
(2.4.71 *supo...*)
= *kumbhakāraḥ*

It should be remembered here that affix *aṆ* is a *kṛt* and as such is introduced to denote *kartṛ* 'agent'. The first constituent of the compound *kumbhakāra* denotes *karman* 'object'. These relations are both inherent in the compound. The action with reference to which *karman* and *kartṛ* are expressed is, of course, denoted by *ḌUkṛÑ*. Now recall the derivation of *pācakaḥ* with underlying verbal root *pac* after which affix *ṆvuL* is introduced.

Since *ṆvuL* is a *kṛt* affix, it too denotes *kartṛ*. The derivational history of *kumbhakāraḥ* and *pācakaḥ* shows that they inhere diverse syntactico-semantic relations. This is further proof of the effectiveness of referential indices in resolving problems encountered in complex derivations.

It should be obvious by now that derivations may relate to sentences or sentence-like strings. I have already discussed the derivation of *putrīyati*, *rājapuruṣaḥ* and *kumbhakāraḥ* where the first two are optional and the last obligatory. The *putrīyati* can be used optionally with the sentence *ātmanaḥ putram icchati* and *rājapuruṣaḥ* can be used alternately with the sentential string *rājñaḥ puruṣaḥ Kumbhakāraḥ* however, is obligatory involving an *upapada*.

Pāṇini also discussed many derivations which involve.sentences relatable to each other. Consider for example the following rules.

1.4.51 *akathitaṃ ca*
'a *kāraka* not yet assigned any one of the other names is also assigned the name *karman*'
1.4.52 *gatibuddhipratyavasānārthaśabdakarmākarmakāṇāṃ aṇi karttā sa ṇau*
'the agent of a non-*Ṇic* action having the signification of *gati* 'movement', *buddhi* 'perception' or *pratyavasāna* 'consuming', or having *śabda* 'sound' as its object, or having no object at all is termed *karman* when the same root terminates in *ṆiC*'
1.3.53 *hṛkor anyatarasyām*
'a *kāraka* which serves as the agent of *hṛÑ* 'to carry' and *ḌUkṛÑ* 'to make' not used with *ṆiC* optionally is termed *karman* when used with *ṆiC*'
1.4.55 *tatprayojako hetuś ca*
'a *kāraka* ~~which~~ serves as *prayojaka* 'instigator' of the agent, in addition to being a *kartṛ*, is termed *hetu* 'cause'
Let us consider some examples.

21. *devadattaḥ pāṇinā kaṃsapātryāṃ gāṃ dogdhi payaḥ*
    'Devadatta is milking the milk by hand in a copper vessel'
22. *devadattena paṇinā kaṃsapātryāṃ gauḥ payo duhyate*
    'Cow's milk is milked by hand in a copper vessel by Devadatta'
23. *devadattaḥ ajāṃ grāmaṃ nayati*
    'Devadatta is bringing the goat to the village'
24. *devadattena ajā grāmaṃ nīyate*
    'The goat is taken to the village by Devadatta'
25. *māṇavakaḥ dharmaṃ budhyate*
    'The boy understands the duty'
26. *māṇavakena dharmo budhyate*
    'The duty is understood by the boy'
27. *devadattaḥ māṇavakaṃ dharmaṃ bodhayati*
    'Devadatta makes the boy understand the duty'

28. *devadattena māṇavakaḥ dharmaṃ bodhayate*
'The duty is made known to the boy by Devadatta'
29. *devadattena māṇavakaṃ dharmaḥ bodhayate*
'id.'
30. *devadattaḥ yajñadattaṃ grāmaṃ gamayati*
'Devadatta has Yajñadatta go to the village'
31. *devadattena yajñadatto grāmaṃ gamyate*
'The village is gone to by Yajñadatta at the instigation of Devadatta'
32. *devadattaḥ māsam āsyate*
'Devadatta stays (here) for a month'
33. *devadattena māsaḥ āsyate*
'id.'
34. *devadattena māsam āsyate*
'id.'
35. *devadattaḥ yajñadattaṃ māsam āsayati*
'Devadatta has Yajñadatta stay for a month'
36. *devadattena yajñadatto māsam āsyate*
'Yajñadatta is caused to stay for a month by Devadatta'
37. *devadattena yajñadattaṃ māsam āsyate*
'id.'

The above sentences distinguish five types of sentential relations: non-causal active, causal active, non-causal passive, causal passive and impersonal active. These categories are illustrated by 23, 27, 24, 28 and 34 respectively. They all involve one action each, though the transitive actions involve two-place objects, a direct and an indirect one. The causal actions similarly involve two-place agents, an instigator (*prayojaka*) and an instigated (*prayojya*). Sentences 25 and 26 are non-causal active and passive respectively. I have already indicated in connection with *kumāreṇa paṭhyate* that *LA* replacements in *tiṄ* share a dependency relationship with *sUP*. An extracted representation of this dependency will greatly enhance our understanding of the above examples.

The *LA* replacements of *tiṄ* termed *ātmanepada* offer three choices: denoting either an agent, object or *bhāva*. Conversely, the *parasmaipada* replacements can only denote two: agent and object. Actions denoted by an intransitive root do not denote an object except for cases specified otherwise. For example, *māsa* 'month', an item denoting *kāla* 'time', in sentences 32-34 is treated as the object of a seemingly intransitive action denoted by *ās* 'to stay'. The verbal form *āsyate* in sentences 33-34 denotes object and *bhāva* respectively with *te*. Thus, given an abstract representation of sentences 32-34 as *devadatta* (agent) *māsa* (object) *ās* (current action), we can introduce *LAṬ* to be replaced subsequently by the *ātmanepada* ending *te*. It is at this time that one must choose whether one wants to express agent, object or *bhāva* by means of the verbal ending. Once this choice is made, the *sUP* endings can be selected to express either the agent or the object which has not been expressed elsewhere. For example, sentence 32 denotes agent by *te*. Consequently, *devadattaḥ* denotes the nominal stem notion (*prātipadikārtha*). Since the *karman* is left unexpressed, *māsa* takes the accusative ending *am* to express it. Sentence 33 expresses the object with *ya* of *āsyate*. As a result, the agent is to be expressed with the *sUP* in *devadattena*. The nominative in *māsaḥ* on the other hand, expresses the nominal stem notion. Sentence 34 expresses both the agent and the object with the *sUP*. This becomes necessary because of the verbal form *āsyate* which is expressing *bhāva*.

The *Mahābhāṣya* discusses some *ślokavārttikas* (ad 1.4.51; I, 264 ff.) which outline views concerning the denotatum of *LA*. Nāgeśa (*Udyota* ad 1.4.51; I. 270) summarizes them as follows.

38. *gauṇe karmaṇi duhyādeḥ pradhāne nīhṛkṛṣvahām,*
buddhibhakṣyārthayoḥ śabdakarmaṇāṃ ca nijecchayā
prayojyakarmaṇy anyeṣāṃ ṇyantānāṃ lādayo matāḥ
hṛkror nijecchayā kiṃ vā prayojye bahudarśibhiḥ

'A *LA* replacement denotes the secondary object in case of verbal roots *duh* 'to milk', etc. It expresses the primary object in case of *nī* 'to lead', *hṛ* 'to carry', *kṛṣ* 'to drag' and *vah* 'to carry'. In case of the causatives of knowing and consuming, and also verbs having sound as their object, the *LA* expresses whatever one desires. The *LA* expresses *prayojyakarman* 'prompting agent termed object' in case of the other causatives. However, with the causatives of *nī, hṛ* and *kṛṣ* they are expressed by *LA* as one desires...'

The above verse clearly emphasizes the importance of usage and interpretation (*vyākhyāna*) in determining the denotatum of *tiN*, especially in relation to causal and non-causal verbs having dual objects. Consider the causative sentences 35 and 36. The following is their abstract representation.

devadatta (causal agent) *yajñadatta* (causal object)
māsa (object denoting time) *ās* (current causal action)

The affix *LAṬ* is introduced here after *ās* with reference to current time. Since one may choose to express either the agent, object or root sense, a selection of *tiN* to express one of these will require the introduction of *sUP* to express the other two. Thus *tiN* expresses the causal agent and the causal object in 35 and 36 respectively. As a result, we get the accusative ending *am* after *yajñadatta* and *māsa* in 35 to express the object. Similarly a choice to express the causal object with *tiṄ* in 36 requires that the causal agent and the object denoting time be expressed by *sUP*. A choice to express *bhāva* with *ya* will yield 37 where the causal agent and the two objects as well have to be expressed with a *sUP*.

Sentences 30 and 31 illustrate instances of a causal active and its corresponding passive with two-place objects. The causal object is expressed with the verb in 31. This obviously leaves the causal agent to be expressed by the instrumental ending *Ṭā*. The accusative *am* similarly is required after *grāma*. Sentences 25 through 29 involve an action denoted by *budh*. This root requires the introduction of *ātmanepada* endings which, in turn, may denote either agent, object or *bhāva*. Sentence 25 is active, 26 passive. Sentences 27 and 28 are causal active and passive where 27 expresses the agent with *ti*. This leaves both objects to be expressed by the accusative *am*. Sentences 28 and 29 both express the object with *ya*. This, however, they do in turn. That is, 28 expresses the causal object with *tiṄ* and the regular non-causal object with *sUP*. The case is reversed in 29. Sentences 23 and 24 allow the agent or the object to be expressed with *tiṄ*. Since *nī* involves a two-place object, the question whether the passive expresses the primary or the secondary object with the verb is encountered. As is clear from 24, only the primary object should be expressed with *te*. Sentences 21 and 22 illustrate the fact that the secondary object (*gauḥ*) alone can be expressed by the passive form of *duh*. In summation, the above sentences illustrate that their derivations are linked at certain steps in their derivational history via choices relative to the denotata of *tiṄ*.

The preceding description centres around two basic facts: that verbal endings may express agent, object or *bhāva* depending upon whether the verbal root is transitive or intransitive, and that *sUP* endings, among other things, are used to express agent and object if they have not already been expressed by the verbal ending. Furthermore, transitive actions with dual objects pose a problem. Should the verbal endings express the primary or secondary object? The summary verse cited from the *Udyota* of Nāgeśa presents the guidelines. It also illustrates how sentence types with two-place objects can be derivationally related.

Pāṇini, too, has discussed how to relate sentential types involving two-place actions. All the above examples involve a single action except for the causatives which may be viewed as involving two-place actions, i.e. causal action and its non-causal counterpart. For an understanding of how sentences involving two-place actions are derived, consider the following examples:

39. *sthālyām odanaṃ pacantaṃ devadattaṃ paśyāmi*
'I see Devadatta cooking rice in a pot'

40. *tiṣṭhan mūtrayati yavanaḥ*
'The Ionian is urinating while standing'

41. *dakṣiṇena ced yāyān tarhi na śakaṭaṃ paryābhavet*
'The cart would not turn over if he goes by the Southern side'

42. *odanaṃ bhuktvā grāmaṃ gacchati devadattaḥ*
'Devadatta goes to the village after having eaten the rice'

43. *odanaṃ bhuktvā grāmo gamyate devadattena*
'The village is gone to by Devadatta after having eaten the rice'
44. *devadatto grāmaṃ gantum icchati*
'Devadatta wishes to go to the village'
45. *devadattena grāmo gantum iṣyate*
'The village is wished to be reached by Devadatta'

The above are but a few instances of sentences with two-place actions. The problems encountered in deriving them are twofold: specifying the signification of linguistic elements introduced, and outlining constraints relative to the denotatum of grammatical categories such as the agent and the object. All the above sentences entail sentence-like structures mainly due to the involvement of dual actions. Thus sentences 39 and 40 involve two sentences each.

46. *yavanaḥ tiṣṭhati*
'The Ionian is standing', and
47. *yavanaḥ mūtrayati*
'The Ionian is urinating'; as well as
48. *devadattaḥ sthālyām odanaṃ pacati*
'Devadatta is cooking rice in the pot', and
49. *ahaṃ devadattaṃ paśyāmi*
'I see Devadatta'.

The derivation of 39 is allowed by 3.2.126 *lakṣaṇahetvoḥ kriyāyāḥ* which states that affixes *Śatṛ* and *ŚānaC* are introduced as replacements for *LAṬ* providing one action marks another or one action serves as *hetu* 'cause' for another action. The action denoted by *sthā* 'stand' marks the action denoted by *mūtraya* 'urinate'. As a result, *sthā* + *LAṬ* yields *sthā* + *śatṛ* where *Śatṛ* is a replacement for *LAṬ*. Sentence 40 involves the introduction of the affix *Śatṛ* as a replacement for *LAṬ* providing *LAṬ* (*Śatṛ*) does not occur in syntactic co-ordination with an item ending in the nominative. Thus, given the sentence *devadattaṃ paśyāmi* which is derived from *devadatta* + *am* + *dṛṣ* + *LAṬ*, the affix *Śatṛ* can be introduced after *dṛś* under the condition of a syntactic co-ordination with *devadatta* +*am*. Sentence 41 is derived by introducing the affix *LIṄ* after verbal roots denoting *hetu* 'cause' and *hetumat* 'effect' (3.3.156 *hetuhetumator liṅ*). This clearly requires two actions such that one may serve as the cause for the other. Going by the southern side here serves as the cause for the cart's safety, the effect.

Sentences 42 through 45 involve the introduction of affixes *Ktvā* and *tumUN* where 43 and 45 are the passive counterparts of 42 and 44. The introduction of *Ktvā* entails two actions such that one is prior and the other subsequent. *Ktvā* is introduced after the verbal root which denotes the prior action providing both actions share the same agent (3.4.21 *samānakartṛkayoḥ pūrvakāle*). Sentence 43, the passive counterpart of 42, expresses the object by *te*. The object of *bhuj* 'to consume' is expressed by *am*. Recall here that a distinction between primary and secondary objects was made in connection with our discussion of two-place objects. Such a distinction was also maintained between primary and secondary actions in connection with the discussion of two-place actions. Consider, for example, sentences 41 and 45 where the action denoted by *iṣ* 'to wish' is primary as opposed to the secondary action denoted by *gam*. The *kartṛ* of both these actions is denoted by *ti* of the primary action. Consequently the object of *gam*, *grāma*, is expressed with *am*. The verbal form *iṣyate* expresses the object of both the actions in sentence 45. As a result *grāma* takes the nominative rather than the accusative or dative. This is only logical since *grāma* is the object of *gam* while both *grāma* and *gantum* are the objects of *iṣ* (see *Mbh.* ad 3.4.26 *svādumi ṇamul;* II. 251-52). These additional examples reinforce our observations.

50. *devadatto grāmaṃ jigamiṣati*
 'Devadatta wishes to go to the village'
51. *devadattena grāmo jigamiṣyate*
 'The village is wished to be gone to by Devadatta'

Now consider 3.1.7 in relation to sentences 44 and 45.

> 3.1.7 *dhātoḥ karmaṇaḥ samānakartṛkād icchāyāṃ vā*
> 'The affix *saN* optionally is introduced after a verb root which underlies the object of and has the same agent as *iṣ*.'

As has already been stated, *gantum* is the object of *iṣ*. The root which forms part of this object is *gam*. Rule 3.1.7 can introduce the affix *saN* after this root to ultimately derive the form *jigamiṣati*. If the form which ends in affix *tumUN* is not treated as the object referenced with the *karmaṇaḥ* of 3.1.7, *jigamiṣati* can never be derived. Note here that the condition of *samākartṛkatva* 'same agent' imposed by 3.1.7 is shared by 3.3.158 *samānakartṛkeṣu tumun*. The affix *tumUN* occurring in sentences 44 and 45 is introduced by 3.3.158. Since sentences 44, 50, 45 and 51 derive as alternants, the constraint of *samānakartṛkatva* should not be treated merely as an accident.[1] It is directly related to the Pāṇinian schema for relating sentences.

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[1] Deshpande (1980) presents an excellent discussion of the syntax of-*tumUN*, although his claim that the Indian grammatical tradition starting with Patañjali up to the *VP* of Bhartṛhari was unaware of the solution to problems concerning the syntax of-*tumUN* is at best debatable. There are references in the tradition which trace the origin of Bhartṛhari's solutions to the *Mahābhāṣya*. See, for example, *Laghuśabdaratna*, II:646: *idañ ca svādumi ṇamul* (3.4.26) *iti sūtre bhāṣye spaṣṭam. tatratya bhāṣyārthānuvādinyau ceme harikārike ity anyatra prapañcitam*. 'This has been made clear in the *Mahābhāṣya* on rule 3.4.26 *svādumi ṇamul*. These two *kārikā* verses of Bhartṛhari reiterate the content of the *Mahābhāṣya*. This has been expatiated elsewhere.' Nevertheless, Deshpande deserves credit for a refreshingly thorough study.

11

Derivation of Compounds

The following is an outline of the domain under which Pāṇini discusses Sanskrit compounds.

2.1.1 *samarthaḥ padavidhiḥ*
2.1.3 *prāk kaḍārāt samāsaḥ*
2.1.4 *saha supā*
  2.1.5 *avyayībhāvaḥ*
  2.1.21 *anyapadārthe ca saṃjñāyām*
  2.1.22 *tatpuruṣaḥ*
  2.2.22 *ktvā ca*
  2.2.23 *bahuvrīhiḥ*
  2.2.28 *tena saheti tulyayoge*
  2.2.29 *cārthe dvandvaḥ*
2.2.30 *upasarjanaṃ pūrvam*
2.2.38 *kaḍārāḥ karmadhāraye*

Before discussing generative conventions employed in deriving Sanskrit compounds, some generalized constraints implicitly assumed or explicitly stated by Pāṇini should be explained. Compounds come under the structural domain of *padavidhi,* a cover term for constructions which result by integrating two or more fully inflected and syntactically related words. That is, *padavidhi* is a grammatical operation whereby units ending in inflectional endings *sUP* or *tiṄ* can be integrated to yield a single unit. Since units ending in a *sUP* or *tiṄ* are always used as elements in a sentence, *padavidhi* is a syntactic operation and hence, diverse syntactico-semantic relations must fall within its scope.

In order to delimit the scope of *padavidhi*, Pāṇini proposes rule 2.1.1 *samarthaḥ padavidhiḥ* as a metarule of interpretation (*paribhāṣā*). Patañjali, in his *Mahābhāṣya*, discusses various questions related to this metarule in great detail. For our purposes, we can make the general assertion that 2.1.1 specifies that *padavidhi* must meet the condition of *sāmarthya* 'fitness, capability'. This single condition has been variously interpreted. For example,

(1) *rājan* + *Ṅas puruṣa* + *sU*

is a string of two nominal *padas* where *rājan* 'king' and *puruṣa* 'man, servant' are two nominal stems (*prātipadika*) ending in *Ṅas* (genitive) and *sU* (nominative) respectively. If treated as input to *padavidhi*, this string will yield a single integrated unit.

(2) *rājapuruṣaḥ* 'king's man'.

In the absence of integration, the string will yield a construct of two units.

(3) *rājñaḥ puruṣaḥ* 'king's man'.

Since both the integrated and non-integrated units mean the same thing, (3) can be treated as the paraphrase of (2). Pāṇiniyas treat (3) as the *vigraha-vākya* 'analysed form' of the compound (2); both, however, derive from (1).

A distinction is also made between (1) and (3). Grammarians consider (1) an *alaukika vigraha-vākya*, an analytical form existing only on the theoretical level and not attested by usage. As opposed to this, (3) is considered a *laukika vigraha-vākya*, an alternant to (2) which is attested by usage. In accordance with the condition of *sāmarthya*, the capability of (3) is defined as *vyapekṣā* 'mutual expectancy' whereas the capability of (2) is defined as *ekārthībhāva* 'emergence of a single integrated meaning'. In essence, *padavidhi* is a syntactic operation whereby two or more words having a mutual expectancy relationship are integrated to yield a single unit capable of expressing a single integrated meaning.

If two or more units of a sentence cannot be logically construed without each other, they can be regarded as sharing a mutual expectancy relationship. Furthermore, one or one combination of these units may be regarded as *pradhāna* 'principal' while the others are considered as *upasarjana* 'secondary'. In sentence

(4) *rājñaḥ puruṣo rathena grāmaṃ gacchati*
'The king's man is going to the village by means of a chariot',

rājñaḥ puruṣaḥ underlies the *viśeṣaṇa-viśeṣya* 'modifier-modified' relationship which constitutes the logical connection between them. It is also evident from this sentence that *puruṣaḥ* 'man' alone can be most directly related to *kriyā* 'action' which is considered the central denotatum of a sentence. As opposed to this, *rājñaḥ*, genitive singular of *rājan* 'king', is not relatable to anything else but *puruṣaḥ*. Hence, *puruṣaḥ* is the principal element and *rājñaḥ* is secondary. A compound parallel to *rājñaḥ puruṣaḥ* is permissible since its constituents share a mutual expectancy relationship. However, consider the following phrase

(5) *bhāryā rājñaḥ puruṣo devadattasya*
'King's wife Devadatta's man'.

Here, a compound formation of *rājñaḥ puruṣaḥ* is not permissible since *rājñaḥ* and *puruṣaḥ* do not share mutual expectancy and hence cannot be considered logically connected with one another. Instead, in interpreting (5), one must accept that *rājñaḥ* is most logically connected with *bhāryā* while *puruṣaḥ* is most logically connected with *devadatta*. In short, logical connection based on mutual expectancy, and not mere juxtaposition or proximity of elements, is one of the primary conditions imposed upon the formation of compounds.

Aside from the issues of logical connection between the constituents of a compound, one also has to consider yet another requirement: the emergence of a single integrated meaning. Let us compare (2) and (3) from the point of view of their signification. A string of uncompounded words, such as *rājñaḥ puruṣaḥ*, is capable of expressing its total meaning only as the sum of the meanings expressed by its constituents. That is, constituents of an uncompounded string express their meanings cumulatively. The total of the individual meanings expressed by logically connected words can be conveniently labelled the meaning of the uncompounded words. The picture differs, however, when we consider the meaning of compounds. First, a compound unit is only required to express a single integrated meaning. This does not necessarily mean that the meaning must correspond to the total of the meanings of the individual constituents. On the one hand, there are compounds like (2) *rājapuruṣaḥ* in which the constituent units preserve their individual meanings after integration. Integration of this type has been aptly called *ajahat-svārthā* 'that which has not abandoned its own meaning'. On the other hand, there are compounds in which individual constituents find no specific expression. Such compounds have been termed *jahat-svārthā* 'that which has abandoned its own meaning'.

The condition of *sāmarthya* means that a string of logically connected words qualifies for compounding as long as it yields a single integrated meaning; whether this meaning preserves the meaning of the underlying constituents does not matter. For example, a compound like *khaṭvārūḍhaḥ* refers to a social renegade fit for contempt. However, the meaning of the parallel uncompounded string, *khaṭvām ārūḍhaḥ* will simply refer to a person who has climbed into bed.

Rule 2.1.4 *saha supā*, read with the *sUP* of 2.1.2 *sub āmantrite*... and *samāsaḥ* of 2.1.3 *prāk kaḍārāt samāsaḥ*, specifies that an item ending in a *sUP* can be combined with another such item to yield a compound provided only that

(a) a logical connection exists between them, and
(b) that there emerges a single integrated meaning.

This interpretation of 2.1.4 appears to impose two constraints upon the process of compound formation.

(6) Formation of a compound is permissible only when the constituent elements end in a *sUP*. Since a *sUP* can only be introduced after a

prātipadika 'nominal stem', compound formation is further restricted to only those items which underlie a nominal stem.

(7) Compounds cannot contain more than two constituent 'words'.

Constraint (6) rules out the formation of compounds from those constituents which end in a *tiṄ*. Constraint (7) blocks the formation of a compound which may have more than two constituents. However, this latter is not completely accurate since Pāṇini has proposed rules 2.1.24 *anekam anyapadārthe* and 2.2.29 *cārthe dvandvaḥ* which allow the formation of *bahuvrīhi* and *dvandva* compounds from more than two constituents on condition that the *bahuvrīhi* expresses a meaning other than one expressed by its own constituents and the *dvandva* expresses the meaning signified by *ca* 'and'.

Compound formation of more than two constituents poses yet another problem. If there were, for example, four constituents *X*, *Y*, *Z* and *R* and a multiple compound were allowed, what would be the mode of combining these constituents? Should we combine them:

(8) simultaneously, or,
(9) two at a time starting on the left, or,
(10) two at a time simultaneously starting on the left and the right and then combining the results of both, or,
(11) two at a time starting in the middle and then moving to the right and finally combining the initial, or,
(12) two at a time starting on the right.

Except for (8) and (10), the other modes involve a three-step compound formation. The implications of such combinatory modes have been discussed fully in the *Mahābhāṣya* of Patañjali. I shall examine them briefly in connection with my treatment of *bahuvrīhi* and *dvandva* compounds. What is important here is to present a few generalized conventions which will aid our understanding of the Pāṇinian derivation mechanism. I shall recall conventions from earlier chapters as needed; conventions directly relevant to compound derivation will be formulated as the discussion proceeds.

The *Aṣṭādhyāyī* accepts verbal roots (*dhātu*) and nominal stems (*prātipadika*) as potential units of input. We can characterize such input as strings of lexical items capable of matching the meaning of the target utterance. Sentence (4) can be analysed as a target utterance consisting of five fully derived *padas* 'words' which, in turn, underlie five elements. The first four words underlie *rājan*, *puruṣa*, *ratha* and *grāma* which are all technically termed *prātipadika*. The fifth word, *gam* is a *dhātu* 'verbal root'. Each of these elements must undergo various operations to yield the desired sentence. I shall put aside the question of their matching the meaning of sentence (4) and move directly to the derivational steps.

(13) No string can activate the derivation mechanism of this grammar unless the controlling domain (*CD*, first book) assigns a definitional term (*saṃjña*) to each one of its elements. Strings with assigned terms must go to the obligatory domain (*OD*, third through fifth books) where they must locate an interior domain for possible rule application.

There is a definite connection between assignment of a term by the *CD* and locating an interior domain in the *OD*. Since the *OD* covers three books and many interior domains, a rule-by-rule scanning to locate a rule that might apply would be a tedious exercise. Pāṇini, by the implicit device of term assignment, makes locating the desired domain and rules much more economical.

(14) Strings locate domains for possible rule application by examining the governing rules. Thus d_1 is the domain for any string s_1 if s_1 is assigned a term t_1 and t_1 is also contained in the governing rule of d_1.

In view of (14), our string *rājan* (*prātipadika*) + *puruṣa* (*prātipadika*) + *ratha* (*prātipadika*) + *grāma* (*prātipadika*) + *gam* (*dhātu*) must scan the *OD* to locate the interior domains whose governing rules contain the definitional terms *prātipadika* and *dhātu*. As a consequence, *rājan, puruṣa, ratha* and *grāma* are referred to the interior domain of 4.1.1 *ṅy-āp-prātipadikāt* where *sUP* (4.1.2 *svaujas...*) affixes (3.1.1 *pratyayaḥ*) are introduced after (3.1.2 *paraś ca*) items termed *prātipadika*. The selection and placement of a proper *sUP* after *rājan, puruṣa, ratha* and *grāma* is accomplished through a complex process of retrieving the referential indices of *sUP* which, in turn, brings required rules from the *CD* and other domains close to the context of 4.1.2 *svaujas...* . Equally complex procedures must be followed for *gam* which, after being sent to the domain of 3.1.91 *dhātoḥ*, first receives the abstract affix *LAṬ* (3.2.123 *vartamāne laṭ*) and then replaces it with a *tiṄ* (3.4.77-78 *lasya-tiptasjhi...*). The output at this stage becomes: *rājan* + *Ṅas* + *puruṣa* + *sU* +*ratha* + *Ṭā* + *grāma* + *am* and *gam* + *Śap* + *tiP* which must follow further steps in derivation outside the *OD*.

(15) The result of each rule application in the *OD* or in any other domain must be examined by the *CD* and further steps in derivation must be taken either by assigning a fresh term or by exhausting operations triggered by terms already received through referential indices or both. It is imperative then that outputs of the *OD* receive further term assignment from the *CD* and gain access to other relevant domains following locating procedures as outlined in (14).

Aṅga (1.4.13 *yasmāt pratyayavidhis...*), *bha* (1.4.17-18 *svādisv...-yaci bham*) and *pada* (1.4.14 *suptiṅantaṃ padam*) generally are assigned to outputs of the *OD* for further steps in derivation. These terms facilitate locating the *aṅga* (6.4.1 *aṅgasya* through 7.4), *bha* (6.4.129 *bhasya* through 6.4.175 *ṛtvyavāstvya...*) and *pada* (8.1.16 *padasya* through 8.3.55 *apadāntasya...*)

domains. Constituent units of a sentence are termed *pada*; these are the ultimate units derivable from the grammar. Thus, *rājan +Ṅas, puruṣa + sU, ratha + Ṭā, grāma + am* and *gam + Śap + tiP* individually are termed *pada* and, after necessary morphophonemic operations, yield *rājñaḥ, puruṣaḥ , rathena, grāmam* and *gacchati.* A concatenation of these words will produce the target utterance.

(4) *rājñaḥ puruṣo rathena grāmaṃ gacchati.*

The first two *padas* of this sentence can be replaced by a single *pada, rājapuruṣaḥ,* with practically no semantic modification. The underlying *prātipadika* of *rājapuruṣaḥ* will then be *rājapuruṣa,* a nominal compound or a complex nominal stem. In order to derive this compound, we must take the output of the *OD,* i.e. *rājan + Ṅas puruṣa + sU,* a string of two logically connected *padas,* and send it to the domain of compound formation (2.1.1 through 2.2.38) for integration into a compound. As a consequence, we will get a *samāsa* 'compound' of the *tatpuruṣa* type which, in turn, will require that *rājan +Ṅas + puruṣa + sU* be the fixed order for the constituents of this compound. In view of (15), the *CD* will examine the compound string and, by its rule 1.2.46 *kṛttaddhita-samāsāś ca* read with 1.2.45 *arthavad... prātipadika* will assign it the term *prātipadika.* This will lead to the application of 2.4.71 *supo dhātu-prātipadikayoḥ* which requires deleting all the *sUP* affixes contained in a *dhātu* or a *prātipadika.* The result of the application of this rule will be *rājan + puruṣa* which after the deletion of the *n* becomes *rājapuruṣa.* It is important to remember here that the *CD* has termed the compound a nominal stem. Following (14) one might be tempted to take *rājapuruṣa* to the domain of 4.1.1 *ṅy-āp prātipadikāt* for placement of a *sUP.* However, to submit to such temptation could bring undesired results since operations relative to the assignment of the term *samāsa* are yet to be exhausted.

(16) If two terms t_1 and t_2 are assigned to a string s_1 such that t_1 is the basis for the assignment of t_2 operations relative to t_1 must take precedence.

This postulate is necessary for compounds because they are assigned the term *prātipadika* on the strength of the term *samāsa.* Let us examine the controlled derivation of *citraguḥ* 'he who owns brindled cows'. This is a *bahuvrīhi* compound with two constituent *padas: citrā + Jas* and *go + Jas.* Rule 2.2.30 *upasarjanaṃ pūrvam* requires that a constituent termed *upasarjana* 'secondary' be placed first. A referential index (*RI*) of the term *upasarjana* brings 1.1.37 *prathamānirdiṣṭa...*) which explains that an *upasarjana* is that constituent of a compound which is referenced with *prathamā* (first *sUP* triad). However, this cannot resolve our problem since 2.2.24 *anekam anyapadārthe,* the rule which prescribed this compound formation, references *anekam* 'more than one' in *prathamā,* and hence both *citrā + Jas* and *go + Jas* become *upasarjana.* It is 2.2.35 *saptamī viśeṣaṇe bahuvrīhau* which decides that *citrā* + *Jas* should be placed first since it happens to be a qualifier (*viśeṣaṇa*).

After the string is assigned the term *prātipadika,* three operations take place. First, 2.4.71 deletes the two *Jas* affixes thereby reducing the string to *citrago.* Next, 1.2.48 *go-striyor upasarjanasya* demands that the *o* of *go* undergo short vowel (*hrasva*) substitution. Application of this rule is seemingly difficult since we do not know what a short substitute of *o* is. Tracing back the term origin of *hrasva* brings 1.1.48 *ec ig hrasvādeśe* which, when read with 1.3.10 *yathā-saṃkhyam anudeśaḥ samānām,* provides *u* as the proper substitute for *o*. This yields *citragu,* a *pratipadika* (t_2) so designated since it is a *samāsa* (t_1). Operations relative to t_1 now must be exhausted.

The referential index attached to *citragu* includes such terms as *samāsa, bahuvrīhi, upasarjana* and *prātipadika.* In accordance with (14) and (16), strings termed *samāsa* will gain access to the interior domains of 5.4.68 *samāsāntāḥ* and 6.1.223 *samāsasya* since both these rules contain the definitional term *samāsa.* Rule 5.4.68 governs a domain which extends up to 5.4.160 *niṣpravāṇiś ca* and introduces affixes termed *taddhita* after certain compounds. Rule 6.1.223 heads a domain which prescribes accent to compounds with the help of rules 6.1.158 *anudāttaṃ padam ekavarjam* and 6.1.159 *karṣātvato ghaño' nta udāttaḥ* brought close to its context by recurrence (*anuvṛtti*). Since all the rules contained in the second quarter of the sixth book are exceptions or residues of 6.1.223 and a general rule cannot be applied unless its exceptions or residues have been considered, we will have to accept that the domain of 6.1.223 runs through the entire second quarter of book six.

Rule 6.1.158 requires that, except for one syllable, all syllables of an item must be *anudātta* 'low pitched'. In the case of compounds, 6.1.223 names the syllable which should be treated as an exception to this general low pitch accentuation. This rule receives the *anuvṛtti* 'recurrence' of the term *udāttaḥ* 'high pitch' from 6.1.158. It also receives the *anuvṛtti* of *antaḥ* from 6.1.220 *anto' vatyāḥ.* We understand from this that the final syllable of a compound is high pitched ; the remaining syllables stay low pitched. However, this is adjusted further by 6.2.1 *bahuvrīhau prakṛtyā pūrvapadam* to allow the first constituent of a *bahuvrīhi* compound to retain its original accent. Our example, *citragu,* will receive high pitch on *gu* and will be able to retain the original accent on *citra.* It is clear from the derivation of *rājapuruṣa* and *citragu* that the domain of compound rules must be extended to include rules retrieved by referential indices and prompted by term assignment.

The following is a generalized listing of steps involved in deriving Sanskrit compounds.

(17) Under the condition of *sāmarthya,* logically connected *padas* gain access to the domain of compound formation for integration.

Since, in many instances, compound formation is optional, 2.1.11 *vibhāṣā* allows certain strings the option of going through the process of integration or of refraining from it. Strings which meet the conditions of compound formation will yield a compound whereas those that do not will yield target utterances which may or may not be used parallel to compounds with the same meaning.

(18) After the application of rules which allow the formation of a compound, individual constituents are arranged in view of the term *upasarjana.* The output of this domain is termed *samāsa* (t_1).

(19) When the *CD* examines the output of (18), a new term, *prātipadika* (t_2), is assigned. Rule 2.4.71 deletes the *sUP* affixes contained in this *prātipadika.* Since 2.4.71 is a general rule, its exceptions enumerated in section 6.3.1 through 6.3.139 must also be considered.

(20) After the deletion of *sUP*, operations relative to the term *samāsa* are undertaken. For this, the compound string is sent to the interior domain of 5.4.68 *samāsāntāḥ.* As indicated earlier, this domain may introduce certain affixes after the compound.

(21) Since *aṅga* is a term assigned by the *CD* to those strings which undergo affix placement, the output of (20) may be termed an *aṅga* before the affix, and as a consequence, be sent to the domain constituted by rules 6.4.1 through 7.4.97.

(22) In view of (16), the output of (21) is still a *samāsa* and hence is required to exhaust the operations triggered by that term. This results in the scanning of the domain of 6.1.223 for assignment of the accent.

(23) The output of (22) is now allowed to undergo operations required of *prātipadika*, irrespective of the fact that it was originally termed *samāsa.* The most general operation at this stage is the placement of a *sUP.* However, this must wait until a proper number and gender is assigned to the compound. This means scanning the 2.4 section of the grammar again.

Steps (17) through (23) illustrate that the derivation of Sanskrit compounds necessarily requires expansion of the main domain. The explicit idea of domain and recurrence joins hands with the implicit device of referential indices in accomplishing the derivations under the general direction of derivative conventions (13) through (16). The step-by-step derivation of compounds is closely related to the placement of domains in the grammar. This becomes more apparent when we look at the following computation of rules corresponding to various steps in a derivation.

(24) steps (17-18)
2.1.1-2.1.4 (2.1.5-2.1.21) (2.1.22-2.2.22)
(2.2.23-2.2.28) (2.2.29)
2.2.30-2.2.38

(25) step (19)
(2.4.71...) (6.3.1-6.3.139)
(26) steps (20-21)
(5.4.68-5.4.160)
(6.4.1-7.4.97)
(27) step (22)
(6.1.223-6.2.199)
(28) step (23)
(2.4...) (4.1.1-4.1.2...)

Pāṇini, as mentioned earlier, derives Sanskrit compounds with reference to their analysed forms (*vigraha-vākya*). He establishes four categories of compounds: *avyayībhāva, tatpuruṣa, bahuvrīhi* and *dvandva*. However, two more categories, *karmadhāraya* and *dvigu,* Pāṇini treats as subcategories of *tatpuruṣa*. Since compounds express a single integrated meaning and include forms which may be labelled principal (*pradhāna*) and secondary (*upasarjana*), grammarians have attempted to explain the characteristics of compounds with reference to the prominence of constituent meanings.

(29) The meaning of the first constituent is dominant in *avyayībhāva* compounds. A *tatpuruṣa* compound entails exactly the opposite. In *bahuvrīhi* compounds, no constituent is semantically dominant. Instead, some element outside the constituency of the compound enjoys semantic prominence. As opposed to this, a *dvandva* compound assigns equal semantic prominence to each one of its constituents.

(30) *Avyayībhāva* compounds
Avyayībhāva compounds are treated as indeclinables. Pāṇini does not define an indeclinable. Instead, he refers to a class of items headed by *svar* 'heaven' and terms them *avyaya* 'indeclinable'. He extends this same designation to *avyayībhāva* compounds. One can interpret the term *avyayībhāva* as referring to items which attain the status of an *avyaya* through compound formation. However, this does not mean that an indeclinable cannot partake in the formation of an *avyayībhāva* compound. This may appear vacuous, especially when one understands that 2.1.4 *saha supā* require that the constituents of a compound be *padas* and indeclinables cannot be treated as *padas*. It is perhaps in view of this fact that Pāṇini treats *avyayas* as *prātipadikas* and thus clears the way for 4.1.1 and 4.1.2 to yield a *pada* by placement of a *sUP*. This brings the indeclinables on a par with other units which may qualify for compound formation. In essence, an *avyayībhāva* compound, just as any other nominal compound, takes a string of two *padas* $x_n + y_1$ where y_1 may be a *pada* ending in *sU* (nominative singular) which underlies a *prātipadika* termed *avyaya*. The other *pada*, x_n, also a nominal, does

not have to underlie an indeclinable as its *prātipadika*. Neither does it need to end only in the nominative. Pāṇini has referenced the term *avyaya* in the nominative in 2.1.6 *avyayaṃ vibhakti-samīpa...samṛddhi...* in order to show that the indeclinable *pada* will be termed an *upasarjana* and hence placed first in the compound. Let us consider the following derivations.

(31) $x_7 + y_1$ = *hari* + *Ṅi* + *adhi* + *sU* →
adhihari (*harau adhi*) 'on Hari'
(*a*) *hari* → 1.2.45, 4.1.1-2 (placement of *sUP*)
= *hari* + *Ṅi* → 1.4.14 (*pada*)
(*b*) *adhi* → 1.2.45, 4.1.1-2
= *adhi* + *sU*
adhi + *sU* → 2.4.82 # 1.1.37
= *adhi* + *LUK*
= *adhi* + ∅
= *adhi* → 1.4.14 # 1.1.62 (*pada*)
(*c*) *hari* + *Ṅi* + *adhi* → 2.1.1-2.1.4, 2.1.5-2.1.6
hari + *Ṅi* + *adhi* → 2.2.30 # 1/2/43
= *adhi* + *hari* + *Ṅi*
adhi + *hari* + *Ṅi* → 1.2.46, 2.4.71
= *adhihari* + *LUK*
= *adhihari* + ∅
= *adhihari* (*prātipadika, samāsa*)
(*d*) *adhihari*
(*e*) *adhihari* → 1.2.45-46, 4.1.1-2
= *adhihari* + *sU*
adhihari + *sU* → 2.4.82 # 1.1.37 (as in *adhi* + *sU*)
= *adhihari*
adhihari → 1.4.14 # 1.1.62
= *adhihari* (*pada*)

(32) $x_7 + y_1$ = *gopa* + *Ṅi* + *adhi* + *sU*
adhigopam 'on Kṛṣṇa'
(a-d) *gopa* + *Ṅi* + *adhi* → same as steps (a-d) of (31)
= *adhigopa* (*prātipadika, samāsa*)
adhigopa → 1.2.45-46, 4.1.1-2
= *adhigopa* + *sU*
adhigopa + *sU* → 2.4.82 # 1.1.37; 2.4.83
= *adhigopa* + *am*
adhigopa + *am* → 1.4.109, 6.1.107
= *adhigopam*
adhigopam → 1.4.14 (*pada*)

(33) $x_7 + y_1$ = *strī* + *Ṅi* + *adhi* + *sU*
adhistri 'pertaining to women'

(a-d) *stri* + *Ṅi* + *adhi* → same as steps (a-d) of (31)
= *adhistrī*
(*e*) *adhistrī* → 1.2.45-46, 1.2.47
= *adhistri*
adhistri → 4.1.1-2 (same as in (31))
= *adhistri* (*pada*)

Steps (a-b) of (31) illustrate the process whereby a string of two *padas*, *hari* + *Ṅi* + *adhi* + *sU*, was obtained. The first *pada* of this string, *hari* + *Ṅi*, follows the general derivational pattern in that it underlies a *prātipadika* (1.2.45 *arthavad...*) which is sent to the domain of 4.1.1, where 4.1.2 offers a set of twenty-one *sUP* affixes from among which one must be selected. The selection of *Ṅi* (locative singular) after *hari* (similarly, after *gopa* in (32) and *strī* in (33) was accomplished with the help of referential indices and the *kāraka-vibhakti* (1.4;2.3) sections of the grammar. The second *pada*, *adhi* + *sU*, underlies an indeclinable which, in turn, causes *LUK* deletion of *sU* by rule 2.4.82 *avyayād āp-supaḥ*:

> '*LUK* (zero) is ruled as a substitute in place of *āP* (feminine affixes *CāP*, *ṬāP*, and *ḌāP*) and *sUP* which occur after an indeclinable (*avyaya*)'.

According to 2.1.1 *samarthaḥ padavidhiḥ*, integration requires *padas* as inputs. Rule 1.4.14 *sup-tiṅantam padam* states that only those items which end either in a *sUP* or a *tiṄ* may be considered *padas*. The *sU* of *adhi* in (31) was deleted. Can *adhi* still be called a *pada*? The answer is 'yes', since 1.1.62 *pratyaya-lope pratyaya-lakṣaṇam* states that operations relative to an affix take place even though the affix has been deleted. The compounds derived above are allowed by rules 2.1.5 and 2.1.6.

> 2.1.5 *avyayībhāvaḥ 'avyayībhāva'*
> *avyayaṃ vibhakti-samīpa-samṛddhi-vyṛddhy-arthābhāva-atyaya-asamprati-śabda-prādurbhāva-paścād-yathā-ānu-pūrvya-yaugapadya-sādṛśya-sampatti-sākalya-anta vacaneṣu*
> "An indeclinable can be combined with a *pada* ending in a *sUP* provided that the indeclinable has one of the following significations: *vibhakti* 'locus', *samīpa* 'proximity', *samṛddhi* 'prosperity', *vyṛddhi* 'lack of prosperity', *arthābhāva* 'scarcity', *atyaya* 'lapse', *asamprati* 'inappropriate for the occasion', *śabdaprādurbhāva* 'initiation of discourse', *paścāt* 'after', *yathā* 'correspondingly, etc.', *ānupūrvya* 'one after the other. sequence', *yaugapadya* 'simultaneity', *sādṛśya* 'similarity', *sampatti* 'propriety', *sākalya* 'entirety', or *anta* 'limit'.

In our example, *adhi* has been used in the sense of locus. Since 2.1.6 references the term *avyaya* in the *prathamā* 'nominative', *adhi* will have to be placed first (2.2.30 *upasarjanaṃ pūrvam*). The string *adhi* + *hari* + *Ṅi*, has three terms assigned to it: *samāsa, avyayībhāva* and *upasarjana*. Now the term *prātipadika* (1.2.45-46) becomes applicable and 2.4.71 *supo dhātu...* causes the *LUK* deletion of *Ṅi*, thus reducing the string to *adhihari*. Similar steps must be followed in deriving compounds such as (32) *adhigopa* and (33) *adhistri*.

We have left step (d) of (31), etc., with no indication of any rule application. Actually, (31) *adhihari*, as well as (32) and (33), must go through step (d), which requires the scanning of the *samāsānta* (5.4.68) and accent sections of the grammar. I shall discuss rules relating to placement of accent only when it becomes necessary. The placement of *samāsānta* affixes must be discussed. Our examples (31-33) did not qualify for affix placement although they did scan the domain of 5.4.68. One cannot question the validity of taking these strings to the domain of *samāsānta* affixes simply because there was no rule application. We have no way of knowing beforehand what strings may or may not involve the placement of these affixes. Consider the following derivation.

(34) $x_6 + y_1$ = *śarada* + *Ṅas* + *upa* + *sU*
= *upaśaradam* near the time of autumn'
steps (a-c) same as in (33)
(*d*) *upaśarad* → 5.4.68, 5.4.107
3.1.1-2, 4.1.1, 4.1.76
= *upaśarad* + *ṬaC*
upaśarad + *ṬaC* → 1.3.3, 1.3.7, 1.3.9
= *upaśarad* + *a*

Example (34) is similar to (31-33), however, it requires the placement of a *samāsānta* affix *ṬaC* in accord with 5.4.107.

> 5.4.107 *avyayībhāve śarat-prabhṛtibhyaḥ*
> "*ṬaC* is placed after items headed by *śarad*, etc., when they occur in an *avyayībhāva* compound."

In order to accomplish the placement of affixes such as *ṬaC*, we must subject our compound string to access to the domain of 5.4.68 *samāsāntāḥ*, which, itself, is an interior domain of 4.1.76 *taddhitāḥ*. I must point out here that items which undergo the placement of an affix may qualify for assignment of the term *aṅga* (1.4.13 *yasmāt pratyayavidhis...*) and consequently may end up scanning the domain of 6.4.1 *aṅgasya*, even if there is no rule application there. For example, no rule applied to *upaśarada*, yet the *aṅga* domain was scanned. An example of affix placement which involves the application of a rule in the *aṅga* domain follows.

(35) $x_6 + y_1$ = *rājan* + *Ṅas* + *upa* + *sU*
= *uparājan* 'near the king'
steps (a-c) same as in (34)
= *uparājan*
(*d*) *uparājan* → 5.4.68, 5.4.108

uparājan + a = *uparājan + ṬaC*
→ 1.1.64, 1.4.13, 1 4.18, 6.4.1, 1.6.4.129, 6.4.144

It is evident from this derivational history that *uparājan* was sent to the domain of 6.4.1 *aṅgasya* where 6.4.144 *nas taddhite* became applicable. As a result, the *ṭi*, i.e., *an* (1.1.44 *aco' ntyādi ṭi*) of an *n*-final *bha* (1.4.18 *yaci bham*), namely, *uparājan*, had to be deleted because a *taddhita* affix (*ṬaC*) followed. This affix was ruled by 5.4.108 *anaś ca* which states that affix *ṬaC* is placed after an *avyayībhāva* compound ending is *an*. Rules 5.4.107-8 place *ṬaC* obligatorily. However, 5.4.109 *napuṃsakād anyatarasyām* 5.4.111 *jhayaḥ* and 5.4.122 *gireś ca senakasya* make the placement optional when the second member of an *avyayībhāva* compound is neuter, or is '*nadī* river', *paurṇamāsī* 'day of full moon' or *āgrahāyaṇī* 'day of full moon of the ninth month'. Furthermore, *ṬaC* also is optional when the compound ends in *jhay* 'stops' or *giri* 'mountain'. It is imperative that optional status of placement of *ṬaC* yield a set of two forms, one with *ṬaC* and one without it.

After placement of the *samāsānta* affixes, *aṅga* operations become obligatory. The output of this operation is forwarded to the accent domain for accentuation. It is after the process of accentuation that compound strings become eligible for operations which apply only to *prātipadika*. One of the most general operations concerning such items is placement of *sUP* in the domain of 4.1.1. It should be remembered here that proper selection of *sUP* after a nominal stem underlying an *avyayībhāva* compound will still be guided by terms such as *avyaya* 'indeclinable' and *napuṃsaka* 'neuter'. Consequently, the selected *sUP* affix can be deleted by 2.4.82 *avyayād...* or replaced by *am* (2.4.82-84). Some of the preceding derivational details also may prove helpful in understanding the following compound derivations. Common operations regarding *sUP* placement or deletion, ordering of constituents, accentuation and obvious phonological changes, unless necessitated by the nature of a given derivation will not be discussed.

(36) *Tatpuruṣa* Compounds

The description of *tatpuruṣa* compounds, including its subtypes *karmadhāraya* and *dvigu*, is contained in the interior domain 2.1.22-2.2.22. The recurrence of 2.1.11 *vibhāṣā* 'optionally' runs through 2.2.29 *cārthe dvandvaḥ*. The consequence of this recurrence is twofold.

(*a*) Compound formations allowed by rules contained in the set 2.1.12 *āṅ maryādā* ... through 2.2.29 *cārthe dvandvaḥ* may be used alternately with their corresponding non-compound strings.

(*b*) Compound formations not contained in this set, i.e., those allowed by rules prior to 2.1.11 *vibhāṣā*, are obligatory (*nitya*).

Since Pāṇini describes compounds with reference to their analysed forms, it is reasonable to attempt their generation in terms of the *sUP* they underlie. Let us examine the following derivational history.

(37) $x_2 y_1$ = *kaṣṭa* + *am* + *śrita* + *sU*
= *kaṣṭaśrita*
= *kaṣṭaśrita* + *sU*
= *kaṣṭaśritaḥ* 'he who has resorted to grief'
kaṣṭa + *am* + *śrita* + *sU* → 2.1.1-4
2.1.22
2.1.24
2.2.30 # 1.2.43
= *kaṣṭa* + *am* + *śrita* + *sU*
kaṣṭa + *am* + *śrita* + *sU* → 1.2.45-46
2.4.71
= *kaṣṭa* + *LUK* + *śrita* + *LUK*
= *kaṣṭa* + 0 + *śrita* + 0
= *kaṣṭaśrita*
kaṣṭaśrita → accent placement
kaṣṭaśrita → 4.1.1-2
= *kaṣṭaśrita* + *sU*
= *kaṣṭaśritaḥ*

This is a fairly straightforward derivational history. The *kāraka-vibhakti* sections of the grammar helped rules 4.1.1-2 to place a *sUP* after *kaṣṭa* and *śrita*, both *prātipadikas*, to yield *kaṣṭa* + *am* and *śrita* + *sU*. These *padas* were considered syntactically related and thus optionally were allowed to form a compound by 2.1.24.

> 2.1.24 *dvitīyā-śrita-atīta-patita-gata-atyasta-prāpta-āpannaiḥ*
> "A *pada* ending in *dvitīyā* (accusative) optionally can be combined with another *pada* containing such items as *śrita* 'resorted to', *atīta* 'passed', *patita* 'fallen', *gata* 'gone', *atyasta* 'thrown beyond', *prāpta* 'attained' and *āpanna* 'reached'.

The term *dvitīyā* in 2.1.24 is referenced with the nominative (*prathamā*), and since items referenced with the nominative mark an *upasarjana* (1.1.62 *prathamā*...), *kaṣṭa* + *am* was recognized as an *upasarjana* and placed first in the compound string: *kaṣṭa* + *am* + *śrita* + *sU* (2.2.30). Rules 1.2.45-46 identified the string as a *prātipadika* to which 2.4.71 applied. Subsequently, *am* and *sU* were deleted. The string was thus reduced to *kaṣṭaśrita* which, after the placement of proper accent, was ready to accept the *sUP* placement used in deriving *kaṣṭaśritaḥ*, a *pada* containing a *samāsa* 'compound' termed *prātipadika* 'nominal stem'.

The recurrence of *dvitīyā* is carried through 2.1.29 *atyanta saṃyoge ca*. These rules account for the formation of compounds which are derived from strings containing one *pada* in *dvitīya* and the other underlying a nominal stem ending in *Kta*. Pāṇini specifies conditions which allow particular compounds by citing the nominal stems, *sUP* or meanings involved. Thus he cites indeclinables such as *svayam* 'self' (2.1.26 *svayaṃ ktena*) and *sāmi* 'half' (2.1.27 *sāmi*) which may be combined with items ending in *Kta* (3.2.102 *niṣṭhā*). He also cites specific nominal stems such as *khaṭva* 'cot' as part of a *pada* ending in accusative, although he further restricts the compound formation by imposing a semantic condition *kṣepa* 'contempt' (2.1.26 *khaṭvā kṣepe*). Similarly, in 2.1.28 *kālāḥ* he identifies the constituents in accusative by citing *kāla* 'measure of time' as the general signification of their nominal stems. In 2.1.29, he cites the general meaning *kāla* but no longer restricts the second constituent to those which contain *Kta*. Instead, he cites another semantic constraint: *atyanta-saṃyoga* 'full duration'. These rules are illustrated by: *svayaṃ dhautau* (*pādau*) 'feet washed by themselves', *sāmikṛtam* 'half-done', *khaṭvārūḍha* 'a social renegade', *māsapramitaś* (*candramā*) 'new moon about to start measuring the month by her shape' and *muhūrtasukham* 'momentary pleasure'. All these derivations follow the general steps outlined under (17) through (27).

Parallel to instances of *pada* ending in *dvitīyā*, Pāṇini also enumerates instances where words ending in *tṛtīya* (instrumental), *caturthī* (dative), *pañcamī* (ablative) and *saptamī* (locative) can be combined with other *pada*. For example, words ending in *tṛtīyā* (2.1.30 *tṛtīyā tatkṛtārthena guṇavacanena*) can be combined with items containing *artha* 'wealth' or items signifying qualification (*guṇavacana*) ascribed to them (*tatkṛtārtha*). In addition, a *pada* ending in *tṛtīyā* can also be combined with another *pada* which contains a nominal stem in *kṛt* (3.1.93 *kṛd-atiṅ*) expressing either *kartṛ* 'agent' or *karaṇa* 'instrument' (2.1.32 *kartṛ-karaṇe kṛtā...*). Examples of these include: *kirikāṇaḥ* 'a person who has but one eye due to (the charge of) a boar', *dhānyārthaḥ* 'wealth due to grain' (2.1.30), *māsenapūrvaḥ* 'prior by a month', *mātṛsadṛśaḥ*/*mātṛsamaḥ* 'like (equal to) mother', *māṣonam* 'less by a *māsa* (a copper coin)', *vākkalahaḥ* 'quarrel by word', *ācāranipuṇaḥ* 'skilful in behaving', *tilamiśraḥ* 'mixed with sesame', *ācāraślakṣṇaḥ* 'gentle in behaving' (2.1.31), *ahihataḥ* 'killed by a snake(bite)' and *paraśuśchinnaḥ* 'cut by an axe' (2.1.32).

A *pada* ending in *caturthī* (2.1.36 *caturthī tadartha-artha-bali-hita-sukha-rakṣitaiḥ*) can be combined with a *pada* either signifying a thing for it, or containing *artha* 'purpose', *bali* 'ritual offering', *hita* 'good', *sukha* 'pleasant' or *rakṣita* 'reserved' as its nominal stem. Thus we get examples: *yūpadāruḥ* 'wood for the ritual post', *kuṇḍalahiraṇyam* 'gold for the ear-rings', *indrabaliḥ* 'ritual offering for Indra', *gohitam* 'good for cows', *gosukham* 'pleasant for cows' and *putrarakṣitaḥ* 'reserved for the son'.

Instances of a *tatpuruṣa* compound with a constituent in *pañcamī* (ablative) are limited. Pāṇini identifies entities serving as the source of fear as *apādāna* 'ablative' (1.4.25 *bhī-trārthānām...*) and rules *pañcamī* after them. Such words can be combined with those words which may contain the nominal stem *bhaya* 'fear' (2.1.37 *pañcamī bhayena*). This can give the example *vṛkabhayam* 'fear of a wolf or wolves'. A few *padas*-ending in *pañcamī* may be combined with other *pada* provided these latter contained items such as *apeta* 'away', *apoḍha* 'separated', *mukta* 'released', *patita* 'fallen' and *apatrasta* 'frightened' (2.1.38 *apetāpoḍha...*). Examples for these are *sukhāpetaḥ* 'away from comfort', *kalpanāpoḍhaḥ* 'separated from or lacking imagination', *cakramuktaḥ* 'released from the wheel', *svargapatitaḥ* 'fallen from heaven' and *taraṅgāpatrastaḥ* 'frightened of waves'. Finally, *padas* which end in *pañcamī* and either contain *kṛcchra* 'difficult' or items which have the signification of *stoka* 'little', *dūra* 'distant' or *antika* 'proximate' may be combined with *padas* containing a *Kta*. Thus, we get examples such as *stokānmuktaḥ* 'saved by a little effort', *kṛcchrāllabdaḥ* 'obtained with difficulty', *antikādāgataḥ* 'arrived from a nearby place' and *dūrādāgataḥ* 'arrived from a distant place' (2.1.39 *stoka-antika-dūra-artha-kṛcchrāṇi ktena*).

A detailed enumeration of *tatpuruṣa* compounds having a constituent in *saptamī* (locative) is available in 2.1.40 and 2.1.40-48. This time Pāṇini does not identify specific constituents ending in the locative. Instead he cites the nominal stems of constituents which combine with a constituent in the locative. Consider 2.1.42 *siddha-śuṣka-pakva-bandhaiś ca* which states that a *pada* ending in locative may be combined with another *pada* which contains nominal stems such as *siddha* 'made', *śuṣka* 'dried up', *pakva* 'cooked, ripe' and *bandha* 'tied'. Thus we derive *grāmasiddha* 'made in the village', *ātapaśuṣka* 'sun-dried', *sthālīpakva* 'cooked in a *sthālī* (a vessel)' and *yūpabandha* 'tied to a ritual post' from *grāma + Ṅi + siddha + sU, ātapa + Ṅi + śuṣka + sU, sthālī + Ṅi + pakva + sU* and *yūpa + Ṅi + bandha + sU* respectively. A few other rules also provide for a *pada* in the locative to be combined with another *pada* with specific stems and semantic conditions.

Pāṇini waits almost till the end of the section to describe *tatpuruṣa* compounds one constituent of which ends in *ṣaṣṭhī* 'the sixth *sUP* triad'. This is only logical since relations expressed by *ṣaṣṭhī* are considered a residue (*śeṣa*) of relations expressed by other endings. Pāṇini presents 2.2.8 *ṣaṣṭhī* whereby a nominal ending in *ṣaṣṭhī* is combined with a logically connected nominal. We have already discussed *rājapuruṣa* which is derived from *rājan + Ṅas puruṣa + sU*. This rule is a general rule to which Pāṇini notes certain exceptions. For example, a word ending in *ṣaṣṭhī* cannot be combined with a logically connected word if the *ṣaṣṭhī* expresses *nirdhāraṇa* 'singling out an individual or a thing on the basis of class, quality and action' (2.2.10 *na nirdhāraṇe*). A string such as *kṣatriyo manuṣyāṇāṃ śūratamaḥ* 'a *Kṣatriya* is the bravest among all men', derives from *kṣatriya + sU* *manuṣya* + *ām śūratama* +*sU*. Although *kṣatriya* + *sU* and *manuṣya* + *ām* are logically connected, 2.2.10 will block their combination since the *ṣaṣṭhī* (*ām*) has been added after *manuṣya* to express *nirdhāraṇa*. Similarly, a nominal ending in *ṣaṣṭhī* cannot be combined with any one of the following: an ordinal (ending in a suffix *pūraṇa* cf. 5.2.48 *tasya pūraṇe*..., etc.), a word expressing quality (*guṇa*), a word expressing satisfaction (*suhita*), a word ending in affixes *Śatṛ* and *Śānac* (3.2.127 *tau sat*), an indeclinable, a word ending in *tavyaT* (3.1.96 *tavyat*...) and a word co-referential with the nominal in *ṣaṣṭhī* (2.2.11 *pūraṇaguṇa*...). Consequently, compounds are not permissible for strings such as *chātrāṇāṃ pañcamaḥ*, 'fifth among the students', *kākasya kārṣṇyam* 'blackness of the crow', *phalānāṃ suhitaḥ* 'satisfaction of fruits', *brāhmaṇasya kurvan* 'doing the work of a *brāhmaṇa*', *brāhmaṇasya kṛtvā* 'having finished the work of a *brāhmaṇa*', *brāhmaṇasya kartavyam* 'fit to be done by a *brāhmaṇa*' and *rājñaḥ pāṭliputrakasya* 'of the king of *Pāṭaliputra*'. Additionally, nominals ending in *ṣaṣṭhī* cannot be combined with a logically connected nominal if this nominal contains *Kta* and *Kta* is ruled to express *pūjā* 'respect' (2.2.12 *ktena ca pūjāyām*) or *adhikaraṇa* 'locus' (2.2.13 *adhikaraṇavācinā ca*).

Rule 2.3.65 *kartṛkarmaṇoḥ* states that when nominals ending in a *kṛt* are to be used in a sentence, the agents or objects of the actions denoted by the roots underlying those nominals must be expressed by genitive. This presents no problem when only the agent or the object is to be expressed. But what if both are to be expressed in the same sentence? The genitive ruled by 2.3.65 can only be introduced to express the object (2.3.66 *ubhayaprāptau karmaṇi*). Coming closer to the context of a *tatpuruṣa* formation, we find that 2.2.14 *karmaṇi ca* will block the formation of a *tatpuruṣa* with a constituent in *ṣaṣṭhī* if the *ṣaṣṭhī* was ruled by rules 2.3.65-66 to denote the object. Combining a *ṣaṣṭhī* which has been ruled by 2.3.65 to express agency similarly will be blocked by 2.2.16 *kartari ca*. Furthermore, a nominal which ends in a *ṣaṣṭhī* ruled by 2.3.65 cannot be combined with a nominal ending in *tṛC* or *aka* (2.2.15 *tṛjakābhyām kartari*). Thus compounds parallel to *gavāṃ dohaḥ* 'milking of a cow', *kūpasya khanakaḥ* 'digger of a water-well' and *tava śāyikā* 'your turn to sleep' are not available in the usage.

Note here, however, that 2.2.17 *nityaṃ krīḍājīvikayoḥ* allows a *pada* in *ṣaṣṭhī* to combine with another *pada* ending in *aka* provided the compound denotes *krīḍā* 'sport' or *jīvikā* 'livelihood'. Thus compounds such as *uddālakapuṣpabhañjikā* 'a sport where *uddālaka* flowers are broken or crushed' and *dantalekhakaḥ* 'he who earns his living by painting teeth' obligatorily are ordered despite the stipulation of 2.2.15. See pages 28-29 for differing interpretations of this rule.

Pāṇini also discusses a special type of *upapada* 'conjoined' *tatpuruṣa* wherein a co-occurring nominal obligatorily is combined with a logically connected nominal (2.2.19 *upapadam atiṅ*). The derivation of such compounds is relatively complex. Consider *kumbhakāra* 'pot-maker' which, at least theoretically, is derived from *kumbha* + *Ṅas* + *ḌUkṛÑ* + *aṆ*. The affix (3.1.1 *pratyayaḥ*) *aṆ* (3.2.1 ...*aṆ*) is added after (3.1.2 *paraś ca*) the verbal root (3.1.91 *dhātoḥ*) to express *kartṛ* 'agent' (3.4.67 *kartari kṛt*) under the condition that a co-occurring nominal also expresses *karman* 'object' (3.2.1 *karmaṇi*...). In the above string, the co-occurring nominal is *kumbha* + *Ṅas*. It is termed an *upapada* by 3.1.92 *tatropapadaṃ saptamīstham* since it expresses the object and is referenced by *saptamī* in 3.2.1 *karmaṇy aṇ*. It is interesting to note that *kumbha* does not take *dvitīyā* to express the object it specifies. Instead, it takes *ṣaṣṭhī* which, in turn, is conditioned by the use of the *kṛt* affix *aṆ* after *ḌUkṛÑ*. The interdependency of the placement of *ṣaṣṭhī* and *aṆ* contributes to the complexity of such derivations. This need not trouble us, however, since for purposes of compound derivations, we will have the already derived string *kumbha* + *Ṅas* and *kṛ* + *aṆ*. This will yield an *upapada-tatpuruṣa*: *kumbha* + *Ṅas* + *ḌUkṛÑ* + *aṆ* → *kār* + *a*) = *kumbha* + *as* + *kāra* → *kumbha* + *kāra* = *kumbhakāra*.

Rules 2.2.20 *amaivāvyayena*, 2.2.1 *tṛtīyā-prabhṛty anyatarasyām* and 2.2.22 *ktvā ca* also provide *upapada-tatpuruṣa* formations. These rules deal specifically with combinations of indeclinables and co-occurring *padas*. Two interesting facts may be noted about such compounds.

(*a*) Compounds allowed by 2.2.20 are obligatory while those allowed by 2.2.1 and 2.2.22 are optional.

(*b*) Whereas 2.2.20 specifies the indeclinables which must be combined with co-occurring *padas* in general, 2.2.1 and 2.2.22 specify both the co-occurring *pada* and the indeclinable with which it may combine.

Examples of type (*a*) are: *svāduṃkāram* and *lavaṇaṃkāram* as in *svāduṃkāraṃ bhuṅkte* 'he eats the food after sweetening it' and *lavaṇaṃkāraṃ bhuṅkte* 'he eats the food after salting it'. Note here that *kāram* of both these examples is termed indeclinable by 1.1.39 *kṛṇ mejantaḥ*. Rule 2.2.20 specifically requires that indeclinables combining under this rule must end in *am*. Examples of type (*b*), under 2.2.21, also require the indeclinable to end in *am* but additionally require that the co-occurring *padas* must be those allowed by rules 3.4.47 *upadaṃśas*... through 3.4.64 *anvacyā*.... Thus we get optional compounds such as *mūlakopadaṃśa* in *mūlakopadaṃśaṃ bhuṅkte* 'eats with a bite of a radish' and *uccaiḥkāram* in *uccaiḥkāram ācaṣṭe* '...talks about a sad thing by raising the voice'. Rule 2.2.22 allows one non-*am* indeclinable, *Ktvā*, which is used in deriving such examples as *uccaiḥkṛtya* which has the same meaning as *uccaiḥkāram*.

Mention must also be made of a few other types of *tatpuruṣa* compounds. A most frequent type is the negative *tatpuruṣa* where the negative particle *naÑ*, an indeclinable, is combined with a logically connected word (2.2.6 *nañ*). Thus, *na brāhmaṇaḥ* can have a parallel compound form *abrāhmaṇaḥ* 'a non-*brāhmaṇa*'. Another indeclinable, though not the constituent of a negative compound, is *īṣat* 'slight, little' which can be combined with a logically connected non-*kṛt* word to yield a *tatpuruṣa* compound as follows.

īṣat + *sU piṅgala* + *sU* → *īṣatpiṅgala* 'light yellow' (2.2.7 *īṣad akṛtā*)

Rule 2.1.49 *pūrvakāla...kevalāḥ samānādhikaraṇena* adds a new dimension to the description of *tatpuruṣa* compounds. It states that a *tatpuruṣa* compound optionally can be formed by combining a nominal which either signifies *pūrvakāla* 'preceding action' or contains bases such as *eka* 'single', *sarva* 'all', *jarat* 'old', *purāṇa* 'ancient, old', *nava* 'new' or *kevala* 'alone' with a logically connected co-referential nominal. Aside from the general requirement of logical connection, this rule imposes formal and semantic constraints and demands that the second constituent be co-referential with the first. Now, since *samānādhikaraṇa* 'co-referential' is a technical term, its referential index must be reconstructed. This in turn will involve 1.2.42 *tatpuruṣaḥ samānādhikarana karmadhāravah* which states that a *tatpurusa* compound with co-referential constituents is termed *karmadhāraya*. Hence, 2.1.49 will allow a compound formation *snātabhuktaḥ* 'a person who first bathed then ate' from *snāta* + *sU* and (*anu*) *bhukta*+*sU* where *snāta*+*sU*, a nominal signifying period of action, is combined with (*anu*) *bhukta* + *sU* which signifies following action and is co-referential with *snāta* + *sU*. Similarly one can derive *ekavaidyaḥ* 'there is just one person and he is the doctor', *sarvamanuṣyaḥ* 'all men', *jaradaśvaḥ* 'old horse', *purāṇāvasatham* 'old dwelling', *navāvasatham* 'new dwelling' and *kevalānnam* 'just the rice (grain).

The *anuvṛtti* of *samānādhikaraṇa* continues through 2.1.72 *mayūra...* which, incidentally, is also the last rule of the 2.1 quarter. This means that compounds allowed by rules subsequent to, and including, 2.1.72 will be termed *karmadhāraya*. However, Pāṇini introduces 2.1.52 *saṃkhyāpūrvo dviguḥ* to assign the term *dvigu* rather than *karmadhāraya* to those *tatpuruṣa* compounds formed by 2.1.51 which have a nominal denoting number as their first constituent. Rule 2.1.51 allows a nominal optionally to combine with a logically connected co-referential nominal provided that the first nominal contains bases signifying *diś* 'direction' or *saṃkhyā* 'number', or the resultant compound is to express the meaning of a *taddhita* 'secondary' affix or the compound is to be followed by a (third) constituent or is to express the meaning of *samāhāra* 'collection'.

Let us consider *paurvaśālaḥ* 'existing in the eastern hall' which is derived by combining two logically connected co-referential words: *pūrvā* + *Ṅi* and *śālā* + *Ṅi*. The first word contains a base which signifies *diś;* the second word is co-referential with it. This yields *pūrvaśālā* to which the *taddhita* affix *Ña* (4.3.57 *tatra bhavaḥ*) is introduced. After a few familiar operations, this will yield *paurvaśālaḥ*. Similarly, *pūrvāśālā* can be formed if a third constituent, such as *priya* + *sU* follows, such a combination would yield *pūrvaśālāpriyaḥ* 'he to whom the eastern hall is dear', a *bahuvrīhi* compound with an internal *tatpuruṣa* named *karmadhāraya*. In order to generate such compounds, one has to exhaust all the possibilities of rule application on the internal *tatpuruṣa*. For example, if the three constituents of *pūrvaśālāpriyaḥ* were allowed to form a *bahuvrīhi* without first forming an internal *tatpuruṣa*, 6.1.223 would allow high pitch on the last syllable of *pūrvaśālāpriyaḥ*, which would be wrong. The high pitch is intended on the last syllable of *pūrvaśālā*. This can be accomplished only if we first form the *tatpuruṣa*. That this preference is well motivated can be most effectively shown by taking an example such as *pañcagavadhanaḥ* 'he who possesses five cows as his property'. It derives from: *pañcan* + *Jas* and *go* + *Jas* which are in syntactic coordination. After the deletion of the endings and the *n* of *pañcan*, we will derive the *dvigu-tatpuruṣa pañcago*. Since *dvigu* is considered singular, the ending which can be introduced after *pañcago* should also be singular. However, before we add the ending *sU* by 4.1.2, we must exhaust the operation of placing *ṬaC* after *pañcago*. This will yield: *pañcago* + *ṬaC* → *pañcago* + *a* = *pañcagava*. It is only after this that *pañcagava* can take *sU* and the resulting *pañcagava* + *sU* be compounded with *dhana* + *sU* to yield *pañcagavadhanaḥ*. Note here that *Jas* after both *tatpuruṣa* constituents is plural nominative. The *sU* after *dhana* is singular. An attempt to form a *bahuvrīhi* irrespective of prior *tatpuruṣa* formation would have created difficulties. The endings of the constituents would have been dissimilar. However, by forming the *tatpuruṣa* first, the resultant form *pañcagava*, can only take *sU* and *pañcagava* + *sU* and *dhana* + *sU* would have similar endings.

Besides yielding internal *dvigu* or *karmadhāraya*, constituents in syntactic coordination can also yield independent *dvigu* or *karmadhāraya* compounds. Consider the following three examples: *aṣṭādhyāyī* 'collection of eight chapters', *pañcapūlī* 'collection of five bunches' and *pañcakumārī* 'collection of five virgins'. They are derived from *aṣṭan* + *ām* + *adhyāya* + *ām*, *pañcan* + *ām* + *pūla* + *ām* and *pañcan* + *ām* + *kumārī* + *ām* respectively. After the *LUK* deletion of *ām*, the first compound is realized as *aṣṭa*(*n* → Ø) + *adhyāya* = *aṣṭādhyāya*. The other two are similarly realized as: *pañcapūla* and *pañcakumārī*. Rule 2.4.17 *sa napuṃsakam* requires such compounds to be treated as neuter. However, it is argued (*Mbh.* and *Pradīpa*, II:863-64) that if the following constituent of such a compound ends in *a*, the compound should be treated as feminine. In view of this, *aṣṭādhyāya* and *pañcapūlā* will have to take *ṄīP* so that one can derive *aṣṭādhyāyī* and *pañcapūlī*. Since the final member of *pañcakumārī* does not end in *a*, it cannot be treated as masculine. Consequently, its final vowel will be shortened by 1.2.47 *gostriyor upasarjanasya*, yielding *pañcakumāri*.

The following are important rules in yielding independent *karmadhāraya*.

2.1.55 *upamānāni sāmānyavacanaiḥ*
'*Padas* signifying *upamāna* (*x* to which *y* is compared can be combined with *padas* signifying *sāmānya* (common property of *x* and *y*) if they are in syntactic coordination.'

2.1.56 *upamitaṃ vyāghrādibhiḥ*
'*Padas* containing nominal stems which denote a thing compared (*upamita*) can be combined with a *pada* containing *vyāghra* 'tiger', etc., provided common property is not being denoted'.

2.1.57 *viśeṣaṇaṃ viśeṣyeṇa bahulam*
'A qualifier *pada* can be diversely combined with another *pada* which contains the qualified'.

Rule 2.1.56 is an exception to 2.1.55 since it allows combining *padas* which do not express common property. For example, consider the compound *ghanaśyāmaḥ* 'Lord *Kṛṣṇa*'. Here *ghana* means cloud and *śyāma* 'blackness' is the common property of both *ghana* and *śyāma*. This compound will be allowed by 2.1.55. However, examples like *naravyaghra* will be allowed only by 2.1.56. Here *nara* 'man' and *vyāgraḥ* 'tiger' possess mutually exclusive properties. Derivationally, 2.1.55 requires *ghana,* the *upamāna* 'standard of comparison'. to be placed first. Rule 2.1.56 would not allow such ordering of constituents. Rule 2.1.57 generalizes the combination of qualifiers and qualifieds in, for example, *nīlotpalam* 'blue lotus'. However, the use of the term *bahulam* 'diversely' implies that such compounds may be obligatory or may not be allowed at all. Compounds such as *kṛṣṇa-sarpaḥ* 'black snake' are obligatory while expressions such as *rāmo jāmadagnyaḥ* 'Rāma, the son of Jamadagni' are not permitted to yield a compound.

(38) *Bahuvrīhi* compounds

As has been pointed out in our discussion of *citragu* and *pūrvaśālāpriyaḥ,* a *bahuvrīhi* is a compound where more than one syntactically related words combine to yield a nominal which serves as a qualifier (*viśeṣaṇa*) to something other than that which is denoted by its own constituents (2.2.24 *anekam anyapadārthe*). The *bahuvrīhis* technically are treated as the remainders of the other compounds. That is, the formation of a *bahuvrīhi* is possible only when no other compound formation is provided for (2.2.23 *śeṣo bahuvrīhiḥ*). Together with *dvandva, bahuvrīhi* also forms an exception to the notion of two-word compound formation.

I have already explained that a constituent which is referred to by the nominative in a rule governing compound formation is termed secondary (*upasarjana*; 1.2.43 *prathamā nirdiṣṭaṃ samāsa upasarjanam*). Furthermore, items identified as *upasarjana* are placed first in a compound (2.2.30 *upasarjanam pūrvam*). Since *anekam* 'more than one' of 2.2.24 *anekam anyapadārthe* refers to the constituents of a *bahuvrīhi* compound, they will be termed *upasarjana.* It is obvious that 2.2.30 *upasarjana pūrvam* cannot regulate the order of constituents in a *bahuvrīhi* compound. Pāṇini offers the following rules to account for what should be placed first in a *bahuvrīhi*.

> 2.2.35 *saptamī-viśeṣaṇe bahuvrīhau*
> "A constituent which is either a qualifier (*viśeṣaṇa*) or which ends in the locative (*saptamī*) is placed first in a *bahuvrīhi* compound."
> 2.2.36 *niṣṭhā*
> "A constituent which ends in suffixes termed *niṣṭhā* (*Kta* and *KtavatU*; 1.1.26 *ktaktavatū niṣṭhā*) is placed first in a *bahuvrīhi* compound."
> 2.2.37 *vāhityāgnyādiṣu*
> "A constituent which ends in suffixes termed *niṣṭhā* optionally is placed first when it is a constituent of compounds such as *āhitāgni* 'he who has set the sacrificial fire', etc."

The above may very well explain why *bahu, citrā, vīra, prāpta, upahṛta* and *uddhṛta* are placed first in compounds such as *bahuvrīhiḥ* 'he who possesses abundant rice', *citragu* 'he who owns brindled cows', *vīrapuruṣako* (*grāmaḥ*) '(a village) where heroic people live', *prāptodako* (*grāmaḥ*) '(a village) to which water has reached', *upahṛtapaśū* (*rudraḥ*) '(Rudra) to whom the sacrifice of an animal has been offered' and *uddhṛtaudanā* (*sthālī*) '(a cooking pot) from which rice has been taken out'. The above compounds are all formed under the provision of 2.2.24 *anekam anyapadārthe*. Four additional rules also deal with the formation of *bahuvrīhi* compounds.

> 2.2.25 *saṃkhyayā' vyayāsannādūrādhikasaṃkhyāḥ saṃkhyeye*
> 'A *pada* which underlies an indeclinable (*avyava*), or underlies *āsanna* 'proximate', *adhika* 'more' or *adūra* 'near' is combined with another *pada* denoting a thing countable (*saṃkhyeya*) to yield a *bahuvrīhi*.'
> 2.2.26 *diṅnāmāny antarāle*
> 'A *pada* which underlies a stem denoting directional name (*diṅnāma*) is combined with another *pada* containing a similar stem provided the resultant *bahuvrīhi* denotes an intermediate direction (*antarāla*).'
> 2.2.27 *tatra tenedam iti sarūpe*
> 'A *pada* which ends either in the locative (*saptamī*) or instrumental (*tṛtīyā*) is combined with another *pada* identical to it to form a *bahuvrīhi*.'
> 2.2.28 *tena saheti tulyayoge*
> '*Saha* 'with' is combined with a *pada* in the instrument to yield a *bahuvrīhi*, provided both constituents are equally conjoined with the action.'

The above rules account for the formation of compounds such as *dvitrāh* 'two or three', *āsannadaśāḥ* 'nearly ten', *upadaśāḥ* 'about ten' (2.2.25); *dakṣiṇapūrvā* 'the direction intermediate between south and east', *pūrvottarā* 'the direction between east and north' (2.2.26); and *keśākeśi* 'a fight where fighters sieze each other's hair' and *daṇḍādaṇḍi* 'a fight where fighters strike with stick', (2.2.27).

I have stated earlier that some sections of book five and six also play a major role in the derivation of compounds. The placement of the *samāsānta* affixes has been discussed in connection with *tatpuruṣa* compounds. Some of these affixes also apply to *bahuvrīhis*. Since the scanning process relative to this has been explained, I shall not discuss it further. However, I must discuss a few rules concerning the replacement of a feminine constituent by its corresponding masculine form.

The following is the crucial rule in this connection.

> 6.3.34 *striyāḥ puṃvad bhāṣitapuṃskād-anūṅ ...*
>
> 'A form denoting feminine is treated as masculine provided (*i*) it has a corresponding masculine, (*ii*) it does not end in *ūN*, (*iii*) it is followed by a feminine form having the same reference (*samānādhikaraṇa*) and (*iv*) the subsequent item is not *priyā*, etc., or does not contain an ordinal affix.'

This rule will operate on examples such as *citragu* and *rūpavadbhāryaḥ* 'he whose wife is beautiful' where *citrā* and *rūpavatī* are replaced by *citra* and *rūpavat.* The shortening of *o* (in *citrago*) and the final *ā* (in *bhāryā*) is due to the items being *upasarjana* (1.2.48 *gostriyor upasarjana*). However, this rule will not apply to examples such as *vāmorūbhāryah* 'he whose wife has beautiful thighs' *gaṅgābhāryaḥ* 'he whose wife is Gaṅgā' and *kalyāṇīpradhānaḥ* 'he among whose wives the beautiful one is chief' where *vāmorū* ends in *ūṄ*, *gaṅgā* does not have a corresponding masculine and *kalyāṇī* is followed by a masculine form.

Replacement by a masculine is also blocked for constituents which denote a name and end in a *taddhita* affix that conditions *vṛddhi* but does not denote *rakta* 'coloured by' or *vikāra* 'modification' (6.3.38 *saṃjñāpūraṇayoś ca;* 6.3.39 *vṛddhi-nimittasya...*). This will block the derivation of **dattabhāryaḥ* and **māthurabhāryaḥ* in favour of *dattābhāryaḥ* 'he whose wife's name is Dattā' and *māthuribhāryaḥ* 'he whose wife was born in Mathurā'. Replacement by a masculine is also prevented in examples such as *sukeśībhāryaḥ* 'he whose wife has beautiful hair' and *rākṣasībhāryaḥ* 'he whose wife is a demon' (6.3.40 *svāṅgācceto' mānini*; 6.3.41 *jāteś ca*) where *sukeśī* ends in feminine suffix *ī* introduced after an item denoting part of a body (*aṅga*) and *rākṣasī* denotes class (*jāti*).

With reference to multiple word compound formation, I suggested five combinatory modes (items 8-12) and posed problems concerning them. Let us consider the following compound:

(39) *rājagavīkṣīram* 'king's cow's milk'.

By 2.1.4 *saha supā,* only two syntactically related words may be combined to yield a compound. Furthermore, the first two constituents, *rājan* + *Ṅas* *go* + *Ṅas,* cannot be combined since they both end in genitive. Instead, a combination of *go* + *Ṅas* + *kṣīra* + *sU* is permissible. However, 2.1.4 also suggests that if we treat *go* + *Ṅas* as *go* + *sU* it can then be permitted to combine with *rājan* + *Ṅas*. The result will be: *rāja*(*n* → 0) *go* = *rājago*. After the placement of *ṬaC*, we can derive *rājago* + *ṬaC* = *rājago* + *a* = *rājagava*. This can then take feminine affix *ṄīP* to yield *rājagavī* 'king's cow'. The preceding shows how we get two compounds *rājagavī* and *gokṣīra*. A third compound can also result if we first combine *go* + *Ṅas* + *kṣīra* + *sU* and then combine that result with *rājan* + *ṄaS*. The result will be: *rājan* + *ṄaS* (*go* + *Ṅas* + *kṣīra* + *sU*) = *rājan* + *ṄaS* + *gokṣīra* + *sU* = *rājagoksīram* 'king's (cow's milk)'. This is possible because in all three derivations the *samartha* relationship is not impaired and only two *padas* are allowed to combine at any one time.

In the derivation of *pūrvaśālāpriyaḥ*, I observed that a *bahuvrīhi* with an internal *tatpuruṣa* will bring an undesired result. I also showed that *pañcagavadhanaḥ* will be blocked if a three-word *bahuvrīhi* was formed simultaneously. Commentators agree that any mode of combination is acceptable as long as the desired forms result and the *samartha* condition is not impaired. However, usages generally favour combining lower level formatives first, then gradually moving towards the higher level constructions. The guiding force is *sāmarthya*; the direction usually is from left to right. Since 2.1.4 accounts for the largest number of compounds, we may favour a combinatory mode of two *padas* at a time. It is probably most revealing, too, since 2.2.24 does not offer any conclusive evidence for simultaneous multiple word compound formation.

It is a general practice in deriving compounds that nominal endings of the constituents is deleted by *LUK* (1.1.61 *pratyayasya lukślulupaḥ*; 2.4.71 *supo dhātuprātipadikayoḥ*). However, since a general deletion rule cannot apply unless its exceptions are fully accounted for, exceptions of *LUK* contained in the set headed by 6.1.3 *alug uttarapade* must be considered. For example, *bahuvrīhi* compounds such as *kaṇṭhekālaḥ* 'he on whose throat there is black' and *urasilomā* 'having hair on the chest' would not lose their locative ending in view of 6.3.12 *amūrdhamastakāt*.... Similar non-deletion is provided for some other compounds which I shall not discuss here for lack of space. Mention must be made, however, of those rules which deal with the assignment of number and gender of compounds.

It is interesting to note that Pāṇini treated the specification of gender as falling outside the scope of his grammar (1.2.53 *tad aśiṣyaṃ saṃjñā-pramāṇatvāt*; also see *Mahābhāṣya* on 4.1.3: *liṅgam aśiṣyaṃ lokāśrayatvāl liṅgasya*). However, since the constituents of a compound characteristically can be of varying genders, the question of assigning gender to a compound is indeed relevant. Thus, an *avyayībhāva* compound is treated as neuter (*napuṃsaka*; 2.4.1 *avyayībhāvaś ca*). A *tatpuruṣa* or a *dvandva* compound is assigned the gender similar to its following constituent (2.4.26 *paraval liṅgaṃ dvandva-tatpuruṣayoḥ*). This, however, covers only a limited number of compounds. For a more comprehensive treatment of gender of various compounds, one should refer to rules such as 2.4.19 *tatpuruṣo' nañkarmadhārayaḥ,* etc. Because there obtains a qualifier-qualified relationship between a *bahuvrīhi* compound and that which it denotes, the gender of a *bahuvrīhi* is not difficult to ascertain. The assignment of number also is fairly straightforward. Most compounds can be handled easily. Pāṇini, however, presents some rules to account for the non-obvious. For example, 2.4.1 *dvigur ekavacanam* states that a *dvigu* compound is singular in number. There are also rules about *dvandva* compounds in singular. Most of the rules relevant to the assignment of number and gender are given in the 2.4 section of the grammar.

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(translated and explained)

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apādāne pañcamī (2.3.28) 140 'the fifth triplet of *sUP* occurs after a nominal stem when *apādāna* is denoted'

apṛkta ekāl pratyayaḥ (1.2.41) 106 'an affix which consists of a single sound segment is termed *apṛkta*'

apetāpoḍhamuktapatitāpatyastair... (2.1.38) 202 'a *pada* which ends in *pañcamī* 'fifth triplet of *sUP*, ablative' combines in a *tatpuruṣa* compound of limited frequency with a syntactically related *pada* which ends in a *sUP* and contains *apeta* 'removed, gone away,' *apoḍha* 'carried away, removed,' *mukta* 'released, freed,' *patita* 'fallen' and *apatrasta* 'scared of'

abhiniviśaś ca (1.4.47) 149 'a *kāraka* which serves as locus is termed *karman*, also when action is denoted by verbal root *viś* used with the preverbs *abhini*'

ami pūrvaḥ (6.1.106) 196 'a single replacement similar to the preceding comes in place of both, a sound denoted by the abbreviatory term *aK* which precedes and *a* of *am*, when *am* follows and *saṃhitā* finds its scope'

amūrdhamastakāt svāṅgād akāme (6.3.12) 210 'non-deletion by means of *LUK* applies to a *saptamī* 'seventh triplet of *sUP*' occurring after a nominal which ends in a consonant, or in *a*, and signifies *svāṅga* 'one's limb' with the exclusion of *mūrdhan* 'forehead' and *mastaka* 'head', when a constituent other than *kāma* 'desire' combines to follow'

amaivāvyayena (2.2.20) 204 'when a *pada* termed *upapada* combines in a *tatpuruṣa* compound with an *avyaya* 'indeclinable,' the indeclinable must end in *am*'

ayasmayādīni cchandasi (1.4.20) 123 '*ayasmaya*, etc., are derived, via *nipātana*, in the Vedic'

arthavad adhātur apratyayaḥ prātipadikam (1.2.45) 46 'a non-root, non-affixal meaningful form is termed *prātipadika* 'nominal stem''

ardhaṃ napuṃsakam (2.2.2) 139 '*ardha* 'half' is termed *napuṃsaka* 'neuter''

arvaṇas trasāv anañaḥ (6.4.127) 79 'the final sound segment of *arvan* is replaced with *tṛ* when *arvan* is not combined after *naÑ* and *sU* does not follow'

alug uttarapade (6.3.1) 62 '*aluk* 'no...*LUK*' and *uttarapade* 'when a following (final) constituent' should both be carried over'

alo' ntyasya (1.1.52) 107 'a substitute specified with the genitive (*ṣaṣṭhī*) replaces the final sound segment of its substituendum'

alo' ntyāt pūrva upadhā (1.1.65) 76 'that which is prior to the final sound segment of a form is termed *upadhā* 'penultimate''

alpāc taram (2.2.34) 8 'that (a nominal *pada*) in a *dvandva* compound which consists of fewer vowels is placed first'

avaṅ sphoṭāyanasya (6.1.123) 118 'the *o* of a *pada*-final *go* 'cow' is, optionally, replaced with *avaṄ*, in the opinion of Sphoṭāyana, when a vowel (*aC*) follows and *saṃhitā* finds its scope'

avyayaṃ vibhaktisamīpasamṛddhi ... (2.1.16) 196 'an *avyaya* 'indeclinable' combines with a syntactically related *pada* ending in a *sUP* to yield a *samāsa* termed *avyayībhāva*, provided the indeclinable denotes *vibhakti* 'sense of a nominal ending,' *samīpa* 'proximity,' *samṛddhi* 'prosperity,' *vyṛddhi* 'lack of prosperity,' *arthābhāva* 'a lack of prosperity,' *atyaya* 'lapse', *asamprati* 'inappropriate for an occasion,' *śabdaprādurbhāva* 'initiation of a discourse,' *paścāt* 'after,' *yathā* 'sense of *yathā*,' *ānupūrvya* 'one after the other, sequencing,' *yaugapadya* 'simultaneity,' *sādṛśya* 'similarity,' *sampatti* 'propriety,' *sākalya* 'entirety,' and *anta* 'limit''

avyayasarvanāmnām akac prāk ṭeḥ (5.3.71) 140 'the *taddhita* affix *akAC* is introduced prior to the *ṭi* of a *sarvanāman*, or prior to the *ṭi* of that which ends in a *tiṄ*, to denote the sense of affixes introduced henceforth, prior to *iva*'

avyayād āpsupaḥ (2.4.82) 196 'affixes *āP* (*ṬāP*, *ḌāP*, *CāP*; 4.1.3 *striyām*) and *sUP* go through deletion via *LUK* when they occur after an *avyaya* 'indeclinable''

avyayībhāvaḥ (1.1.41; 2.4.18) 71 'a compound termed *avyayībhāva* is, additionally, termed an *avyaya* (indeclinable)'

avyayībhāve śaratprabhṛtibhyaḥ (5.4.107) 198 'the *taddhita* affix *ṬaC* occurs after nominal stems listed in the group headed by *śarad* 'autumn' when they combine in a *avyayībhāva* compound as its final constituent'

asaṃyogāl liṭ kit (1.2.5) 112 'a *LIṬ* affix, not originally marked with *P* as an *it* is treated as marked with *K* as an *it*, when it occurs after roots not ending in a conjunct (*saṃyoga*)'

asiddhavad atrābhāt (6.4.22) 79 'here onwards up to the domain of *bha* (of 6.4.129 *bhasya*), operations which share identical conditions are treated as if suspended (*asiddha*)'

asthidadhisakthisakthyakṣṇām anaṅ udāttaḥ (7.1.75) 86 'the final sound segment of an *aṅga* with the signification of neuter, namely, *asthi* 'bone,' *dadhi* 'yoghurt,' *sakthi* 'thigh' and *akṣi* 'eye,' is replaced with *anAṄ*, concurrently marked with *udātta*, when a vowel-initial nominal ending beginning with the instrumental follows'

ā kaḍārād ekā saṃjñā (1.4.1) 52 'only one term is to be assigned from here on prior to *kaḍāra* (2.2.38 *kaḍārāḥ* ...)'

ākrośe nañi aniḥ (3.3.112) 61 'affix *ani* occurs after a verbal root used in construction with *naÑ* to denote an action in the feminine when anger (*ākrośa*) is denoted'

ā kves tacchīlataddharmatat ... (3.2.134) 64 'affixes introduced hereafter prior to *kveḥ* (3.2.77 *bhrājabhāsa* ...) occur after a verbal root to denote *kartṛ* who performs an action because of 'his nature (*tacchīla*), sense of duty (*taddharma*), or skill (*tatsādhukārī*)'

ākhyātopayoge ca (1.4.29) 148 'a *kāraka* which serves as 'one who relates' is termed *apādāna* 'ablative' when the action entails regular instruction'

āṅ maryādābhividhyoḥ (2.1.13) 199 '*āṄ* combines in an *avyayībhāva* compound, optionally, with a syntactically related nominal stem ending in *pañcamī* when *maryādā* 'exclusive limit, up to, though not including' and *abhividhi* 'inclusive limit, up to, though including' are denoted'

āj jaser asuk (7.1.50) 138 'augment *asUK* is introduced, in the Vedic, to *Jas* 'nominative plural' when this same occurs after an *aṅga* ending in *a*'

āto' nupasarge kaḥ (3.2.3) 81 'affix *ka* occurs after a verbal root which ends in *a* and is not used with a preverb, provided a *pada* occurs in construction with the signification of *karman*'

āto yuk ciṇkṛtoḥ (7.3.33) 119 'augment *yUK* is introduced to an *aṅga* ending in *a* when *CiṆ*, or a *kṛt* affix marked with *Ñ* and *Ṇ* as an *it*, follows'

āto lopa iṭi ca (6.4.64) 'the final vowel of an *aṅga* ending in *a* is deleted via *LOPA* when an *ārdhadhātuka* affix which begins with augment *iṬ*, or is marked with *K* and *Ṅ* as an *it*, and begins with a vowel, follows'

ātmanepadeṣv anyatarasyām (2.4.44) 8 '*han* is, optionally, replaced with *vadha* when an *ārdhadhātuka*-replacement of *LUṄ* termed *ātmanepada* follows'

ādir antyena sahetā (1.1.71) 32 'an initial sound segment, when joined together with a final *it*, forms an abbreviatory symbol denoting itself and all intervening (non-*it*) sound segments'

ādir ñiṭuḍuvaḥ (1.3.5) 179 'the initial *ÑI*, *ṬU* and *ḌU* of an item, in *upadeśa*, is termed *it*'

ādeḥ parasya (1.1.54) 108 'a substitute specified for that which follows replaces its initial sound segment'

ādeca upadeśe (6.1.45) 79 'a verbal root which, in *upadeśa*, ends in sounds denoted by the abbreviatory term *eC*, is replaced with *ā*, but not when an affix marked with *Ś* as an *it* follows'

ādeśapratyayayoḥ (8.3.59) 84 'a *s* which occurs at the end of a *pada* after *iṆ* and *kU* and is either a substitute, or part of an affix, is replaced with *ṣ*, irrespective of whether intervened by *nUM*, *visarjanīya* and a sound denoted by the abbreviatory term *śAR*'

ād guṇaḥ (6.1.87) '*LOPA* comes in place of a *vi* termed *apṛkta*'

ādyantavad ekasmin (1.1.21) 113 'an operation applies to a single item similar to one that applies to an initial and final'

ādyantau ṭakitau (1.1.71) 96 'that which is marked with *Ṭ* and *K* as an *it* is attached to the beginning and end, respectively'

ādyudāttaś ca (3.1.3) 40 'an affix which occurs after a verbal root is marked with *udātta* at the beginning'

ādhāro' dhikaraṇam (1.4.45) 104 'a *kāraka* which serves as locus (*ādhāra*) of an action is termed *adhikaraṇa*' *ānaṅ ṛto dvandve* (6.3.25) 79 'augment *ānAṄ* is introduced to the initial constituent of a *dvandva* compound which is formed with constituents ending in *ṛ*, and is used with the signification of a relationship by way of *vidyā* 'study, knowleuge' and *yoni* 'birth''

āne muk (7.2.82) 109 'affix *mUK* is introduced to the *a* of an *aṅga* when *āna* follows'

āmantritasya ca (6.1.198) 114 'the initial vowel of that which is termed an *āmantrita* is also marked with *udātta*'

āmi sarvanāmnaḥ suṭ (7.1.52) 138 'augment *sUṬ* is introduced to the initial of a nominal ending, namely, *ām*, when the same occurs after a pronominal (*sarvanāman*)'

āyaneyīnīyaḥ phaḍhakha ... (7.1.2) 176 'the initial *ph*, *ḍh*, *kh*, *ch* and *gh* of an affix is replaced with *āyan*, *ey*, *in*, *īy*, and *iy*, respectively'

ārdhadhātukaṃ śeṣaḥ (3.4.114) 24 'the remaining affixes are termed *ārdhadhātuka*'

ārdhadhātukasyeḍ valādeḥ (7.2.35) 97 'augment *iṬ* is introduced to an affix which is termed *ārdhadhātuka* and begins with a sound denoted by the abbreviatory term *vAL*'

ārdhadhātuke (2.4.35; 6.4.46) 62 'when that which is termed an *ārdhadhātuka* follows an *aṅga*'

ārhād agopucchasaṃkhyā ... (5.1.19) 19 'a *taddhita* affix, namely, *ṭhaK*, occurs after a nominal stem to denote the sense of affixes introduced by rules prior to, and including, 5.1.63 *tad arhati*, provided the stem signifies something other than *gopuccha* 'cow's tail,' *saṅkhyā* 'number' and *parimāṇa* 'measure of weight''

āvaṭyāc ca (4.1.75) 92 'affix *CāP* occurs to denote feminine also after the non-*upasarjana* nominal stem *āvaṭya* 'grandson of Avaṭa''

āsuyuvapirapilapi ... (3.1.126) 19 'affix *ṆyaT* also occurs after verbal roots *ṣuÑ* 'to press out,' used with the preverb *āṄ*, *yū* 'to mix,' *ḌUvapA* 'to sow,' *rapA* and *lapA* 'to speak,' *trapUṢ* 'to be ashamed' and *camU* 'to sip''

iko guṇavṛddhī (1.1.3) 125 'a substitute specified with express use of the terms *guṇa* and *vṛddhi* must come in place of vowels denoted by the abbreviatory term *iK*'

iko yaṇ aci (6.1.77) 86 'a sound denoted by the abbreviatory term *iK* is replaced with a corresponding sound denoted by the abbreviatory term *yaṆ* when a vowel follows in close proximity'

iko hrasvo' ṅyo gālavasya (6.3.61) 118 'the final sound of a nominal which ends in a sound denoted by the abbreviatory term *iK*, with the exception of *ī* of *Ṅī*, is, in the opinion of Gālava, replaced with its short counterpart when a constituent combines to follow'

ig yaṇaḥ samprasāraṇam (1.1.45) 66 'a replacement vowel denoted by the abbreviatory term *iK* is termed *samprasāraṇa* when it comes in place of corresponding consonants denoted by the abbreviatory term *yaṆ*'

idam iś (5.3.3) 127 '*iŚ* comes in place of *idam* when a *taddhita* affix termed *vibhakti* follows'

indra-varuṇa-bhava-śarva ... (4.1.94) 54 'affix *ṄīṢ* occurs to denote a female, associated with a corresponding male, after non-*upasarjana* nominal stems *indra* 'Indra,' *varuṇa* 'Varuṇa,' *bhava* 'Śiva,' *rudra* 'Rudra,' *mṛḍa* 'Mṛḍa,' *hima* 'ice, snow,' *araṇya* 'forest,' *yava* 'barley,' *yavana* 'Ionian,' *mātula* 'mother's brother,' and *ācārya* 'teacher, preceptor' where, additionally, they also receive augment *ānUK*'

ive pratikṛtau (5.3.96) 65 'the *taddhita* affix *kaN* occurs after a nominal stem used in the sense of *iva* 'like' when the derivate denotes *pratikṛti* 'image, imitation''

ī ca gaṇaḥ (7.4.97) 79 '*ī* comes in place of the *abhyāsa* (6.1.2 *pūrvo' bhyāsaḥ*) of an *aṅga* constituted by verbal root *gaṇa* when affix *ṆiC*, followed by *CaṄ*, follows'

īd āsaḥ (7.2.83) 109 '*āna* when occurring after *ās* is replaced with *ī*'

īdūtau ca saptamyarthe (1.1.19) 121 'forms which end in *ī* and *ū*, and denote the sense of locative (*saptamī*), are termed *pragṛhya*'

īduded dvivacanaṃ pragṛhyam (1.1.11) 121 'a form which ends in *i* and *ū*, and denotes the sense of two, is termed *pragṛhya*'

īṣad akṛtā (2.2.7) 205 'a *pada* which contains *īṣat* 'a little, slight' combines, optionally, in a *tatpuruṣa* compound with a syntactically related *pada* which ends in a *sUP*, but does not contain a stem in a *kṛt*'

ugavādibhyo yat (5.1.2) 159 'the *taddhita* affix *yaT* occurs to denote the sense of affixes introduced by rules prior to that which contains *krīta*, after a nominal stem which either ends in *u*, or is listed in the group headed by *gava*'

uccair udāttaḥ (1.2.29) 122 'that which is articulated with a higher pitch is termed *udātta*'

uṇādayo bahulam (3.31) 62 'affixes *uṆ*, and its likes, are introduced after verbal roots, variously (*bahulam*), when an action is denoted at the current time'

upadaṃśas tṛtīyāyaṃ (3.4.47) 204 'affix *ṆamUL* occurs after verbal root *daṃśA* 'to bite,' used with the preverb *upa*, when it occurs in construction with a *pada* ending in the instrumental (*tṛtīyā*)'

upadeśe' j anunāsika it (1.3.2) 38 'the nasalized vowel of an item in *upadeśa* is termed *it*'

upapadam atiṅ (2.2.19) 179 'a co-occurring *pada* (*upapada*; 3.1.92 *tatropapadaṃ saptamīstham*) which does not end in a *tiṄ*, combines, obligatorily, in a *tatpuruṣa* compound with another syntactically related *pada*'

upamānāni sāmānyavacanaiḥ (2.1.55) 207 'a *pada* which ends in a *sUP* and denotes *upamāna* 'standard of comparison' optionally combines in a *tatpuruṣa* compound with a syntactically related co-referential *pada* which ends in a *sUP* and denotes a common quality'

upamitaṃ vyāghrādibhiḥ sāmānyāprayoge (2.1.56) 207 'a *pada* which ends in a *sUP* and signifies *upameya* 'object of comparison' combines, optionally, in a *tatpuruṣa* compound with a syntactically related coreferential *pada* which ends in a *sUP* and contains items enumerated in the list headed by *vyāghra* 'tiger,' provided a word which denotes a common quality is not used'

upasargāḥ kriyāyoge (1.4.59) 238 'forms enumerated in the list headed by *pra* are termed *upasarga* when used in construction with verbal roots'

upasarjanaṃ pūrvam (2.2.30) 180 'a constituent *pada* which is termed *upasarjana* 'secondary' is placed first in a compound'

upān mantrakaraṇe (1.3.25) 8 'a suffix termed *ātmanepada* occurs after *sthā*' to stay, stand 'when the same is used in construction with the preverb *upa* denoting the action of reciting a *mantra* (hymn)'

upānvadhyāṅvasaḥ (1.4.48) 149 'a *kāraka* which serves as locus is termed *karman* when the action is denoted by a root used with the preverbs *upa*, *anu*, *adhi* and *āṄ*'

ubhayaprāptau karmaṇi (2.3.66) 161 'a *ṣaṣṭhī* 'genitive' occurs to express only *karman* 'object' when both a *kartṛ* and *karman*, not already expressed otherwise, are to be expressed in construction with a nominal ending in a *kṛt* affix'

ubhe abhyastam (6.1.5) 124 'those two, both, are termed *abhyasta*'

ur aṇ raparaḥ (1.1.51) 35 'a replacement vowel denoted by the abbreviatory term *aṆ* is automatically followed by *r* when the same comes in place of *ṛ*'

ukālo' jj hrasvadīrghaplutaḥ (1.2.27) 122 'a vowel articulated with duration of *u*, *ū* and *u*3 is termed *hrasva* 'short,' *dīrgha* 'long' and *pluta* 'extra-long,' respectively'

ṛta id dhātoḥ (7.1.100) 107 'the final *ṛ* of a *dhātu* 'verbal root' termed *aṅga* is replaced with *i*'

ṛto vidyāyonisambandhebhyaḥ (6.3.23) 191 'non-deletion, via *LUK*, applies to a genitive (*ṣaṣṭhī*) which occurs after a nominal stem ending in *ṛ* and used with the signification of a relationship established by way of *vidyā* 'knowledge' and *yoni* 'birth''

ṛtvigdadhṛk... (3.2.59) 119 'affix *KvIN* occurs, by *nipātana*, in the derivation of *ṛtvik*, *dadhṛk*, *srak*, *dik*, and *uṣṇik*; additionally, it occurs after verbal roots *añcU* 'to bend,' *yujI* 'to join' and *kruñcA* 'to be crooked' when roots are used in construction with a *pada* ending in a *sUP*'

ṛtvyavāstvyavāstvamādhvīhiraṇyāni chandasi (6.4.175) 191 'the words *ṛtvya*, *vāstvya*, *mādhvī* and *hiraṇyaya* are derived via *nipātana* in the Vedic'

ekaḥ pūrvaparayoḥ (6.1.84) 62 'one in place of both the preceding and the following'

ekavacanaṃ sambuddhiḥ (2.3.49) 124 'a singular termed *āmantrita* is termed *sambuddhi*'

ekavibhakticāpūrvanipāte (1.2.44) 77 'that which has a fixed nominal ending (in the paraphrase of a compound) is termed *upasarjana* provided preplacement is not to be performed'

ekāco dve prathamasya (6.1.1) 63 'that which is formed with the first vowel of an item is iterated to become two'

ekāco baśo bhaṣ jhaṣantasya (8.2.37) 85 'a replacement denoted by *bhaṢ* comes in place of one denoted by *baŚ* which, in turn, forms part of a monosyllabic part of a verbal root ending in *jhaŚ*, when *baŚ* occurs either at the end of a *pada*, or occurs followed by *s* or *dhva* preceded by a sound denoted by *jhaL*'

eko gotre (4.1.93) 176 'only one *gotra* affix is introduced after a syntactically related nominal stem when descendants are denoted'

eṅ prācāṃ deśe (1.1.75) 122 'a form whose first among vowels is denoted by the abbreviatory symbol *eṄ* is termed *vṛddha* when the denotation is a place in the east'

ec igg hrasvādeśe (1.1.48) 107 '*ik*, alone, comes in place of a vowel denoted by the abbreviatory term *eC* when replacement in short is specified'

eco' yavāyāvaḥ (6.1.78) 115 'a sound denoted by the abbreviatory term *eC* is replaced with *ay, av, āy, āv*, respectively, when a sound denoted by the abbreviatory term *aC* follows in close proximity (*saṃhitā*)'

enapā dvitīyā (2.3.31) 160 'the second triplet of *sUP* is introduced after a nominal stem which occurs in construction with another ending in affix *enaP*'

enab anyatarasyām adūre (5.3.35) 160 'the *taddhita* affix *enaP* occurs with the signification of *diś* 'direction,' optionally, after nominal stems *uttara, adhara* and *dakṣiṇa* when they end in the locative (*saptamī*) and nominative (*prathamā*), though not in the ablative (*pañcamī*), provided derivates denote *diś* 'direction,' *deśa* 'place' and *kāla* 'time' as non-distant (*adūra*)'

er anekāco' saṃyogapūrvasya (6.4.82) 134 'an *aṅga* which consists of more than one vowel and ends in *i*, where *i* is not preceded by a conjunct (*saṃyoga*) contained within a verbal root, is replaced with *yaṆ* when an affix beginning with a vowel follows'

kaḍārāḥ karmadhāraye (2.2.38) 64 'a *pada* which contains *kaḍāra*, et cetera, is, only optionally, placed first in a *karmadhāraya* compound'

kaṇvādibhyo yak (3.1.27) 36 'affix *yaK* is introduced to denote *bhāva* 'root-sense' after verbal roots enumerated in the group headed by *kaṇḍūÑ* 'to scratch''

kambalāc ca saṃjñāyām (5.1.3) 73 'the *taddhita* affix *yaT* occurs also after the nominal stem *kambala* 'blanket' to denote the sense of affixes introduced by rules prior to that which contains *krīta*, provided derivates denote a name (*saṃjñā*)'

kartari karmavyatihāre (1.3.14) 73 'an *ātmanepada* suffix occurs after a verbal root when an agent with reciprocity of action is denoted'

kartari kṛt (3.4.67) 131 'an affix termed *kṛt* is introduced when the signification is agent (*kartṛ*)'

kartari ca (2.2.16) 28 'and also when the signification is agent (*kartṛ*)'

kartari śap (3.1.68) 69 'affix *ŚaP* is introduced after a verbal root when agent (*kartṛ*) is denoted'

kartuḥ kyaṅ salopaś ca (3.1.11) 46 'affix *KyaṄ* occurs, optionally, to denote *ācāra* 'conduct' after a *pada* which ends in a *sUP* and denotes an agent serving as an *upamāna* 'standard of comparison; additionally, the final *s* of the nominal stem goes through deletion via *LOPA*'

kartur īpsitatamaṃ karma (1.4.49) 104 'a *kāraka* which serves as most desired by the agent is termed *karman*'

kartṛkaraṇayos tṛtīyā (2.3.18) 55 'the third triplet of nominal endings is introduced when *kartṛ* 'agent' and *karaṇa* 'instrument' are denoted'

kartṛkaraṇe kṛtā bahulam (2.1.32) 7 'a *pada* which ends in *tṛtīyā* and, either denotes a *kartṛ* or *karaṇa*, combines in a *tatpuruṣa* compound, variously (*bahulam*), with a syntactically related nominal stem which ends in a *sUP* and contains a derivate in *kṛt*'

kartṛkarmaṇoḥ kṛti (2.3.65) 161 'a genitive (*ṣaṣṭhī*) is introduced to express *kartṛ* and *karman* when the nominal is used in construction with an item which ends in a *kṛt* affix, and when *kartṛ* and *karman* are not expressed otherwise'

karmaṇā yam abhipraiti sa sampradānam (1.4.31) 104 'a *kāraka* whom the agent intends as goal of the object of his action is termed *sampradāna*'

karmaṇi ca (2.2.14) 29 'a *pada* which ends in *ṣaṣṭhī* and denotes *karman* also does not combine in a *tatpuruṣa* compound with a syntactically related nominal which ends in a *sUP*'

karmaṇi dvitīyā (2.3.2) 56 'the second triplet of nominal ending is introduced when object (*karman*) is denoted'

karmaṇi hanaḥ (3.2.86) 20 'affix *ṆinI* occurs after verbal root *yajA* used in conjunction with a *pada* which ends in a *sUP* and signifies *karaṇa* 'instrument,' provided action is denoted in the past' *karmaṇy aṇ* (3.2.1) 63 'affix *aN* is introduced after a verbal root when the same is used in construction with a *pada* which denotes *karman*'

karmaṇy adhikaraṇe ca (3.3.93) 154 'affix *Ki* occurs, also, after verbal roots termed *ghu* when roots are used in construction with a nominal denoting *karman*, and the derivate denotes locus (*adhikaraṇa*)'

karmapravacanīyayukte dvitīyā (2.3.8) 160 'the second triplet of nominal endings is introduced after a nominal stem when it is used in construction with a *karmapravacanīya* (1.4.83 *karmapravacanīyāḥ*)'

karmapravacanīyāḥ (1.4.83) 62 'the followings are termed *karmapravacanīya*'

karmavat karmaṇā tulyakriyaḥ (3.1.87) 158 'when the agent (*kartṛ*) of a given action behaves in a manner similar to its object (*karman*), the *kartṛ* is treated as if it was *karman*'

karāṣātvato ghaño' nta udāttaḥ (6.1.159) 193 'an *udātta* is assigned to the final of verbal root *kṛṣ* 'to draw,' and also to that which ends in affix *GHaÑ* and contains an *a*'

kārake (1.4.23) 62 'when that which is doing'

kālāḥ (2.1.28) 201 'a *pada* which ends in the accusative (*dvitīyā*) and signifies time combines, optionally, in a *tatpuruṣa* compound with a syntactically related *pada* which ends in a *sUP* and contains a stem in *Kta*'

kālādhvanor atyantasaṃyoge (2.3.5) 160 'a *dvitīyā* occurs after nominal stems denoting *kāla* 'time' and *adhvan* 'road, distance' when *atyantasaṃyoga* 'continued connection' is denoted'

kālebhyo bhavavat (4.2.34) 114 'the *taddhita* affixes which occur after syntactically related nominal stems having the signification of *kāla* 'time,' et cetera, occur in a manner similar to affixes introduced for derivates with the signification of *bhava* 'born, or found' there'

kiṃsarvanāmabahubhyo' dvyādibhyaḥ (5.3.2) 38 'the *taddhita* affixes, introduced hereafter prior to *diśaḥ*, occur after a nominal stem which consists of *kim* 'what, which' and *sarvanāman* 'pronominal,' with the exclusion of its subgroup headed by *dvi* 'two' and *bahu* 'many''

kimaḥ saṃkhyāparimāṇe ḍati ca (5.2.41) 125 'the *taddhita* affixes *ḌatI*, in addition to *vatUP* with concurrent replacement of its *v* with *gh*, occurs to denote the sense of genitive (*ṣaṣṭhī*) after the syntactically related nominal stem *kim* 'what' when it ends in the nominative (*prathamā*) and distinguishes a numerical measure (*saṃkhyāparimāṇa*)'

kurunādibhyo ṇyaḥ (4.1.170) 125 'the *taddhita* affix *Ṇya* occurs to denote an *apatya* 'offspring' after a syntactically related nominal stem which (*i*) ends in the genitive, (*ii*) is constituted by *kuru*, or (*iii*) begins with *n*, provided the base names a *janapada* 'principality' with the signification of a *kṣatriya*'

kṛttaddhitasamāsāś ca (1.2.46) 52 'that which ends in a *kṛt* or *taddhita* affix, or is a *samāsa*, is also termed a nominal stem'

kṛtyāḥ (3.1.95) 27 'affixes enumerated hereafter are termed *kṛtya*'

kṛd atiṅ (3.1.93) 24 'a non-*tiṄ* affix is termed *kṛt*'

kṛn mejantaḥ (1.1.39) 204 'items ending in *kṛt*-affixes which end in *m*, or a vowel denoted by *eC*, are termed *avyaya* 'indeclinable''

kṅiti ca (1.1.5) 86 'vowels termed *guṇa* and *vṛddhi* do not come in place of a vowel denoted by the abbreviatory symbol *iK* when that which is marked with *K* and *Ṅ* as an *it* follows'

ktaktavatū niṣṭhā (1.1.26) 74 'affixes *Kta* and *KtavatU* are termed *niṣṭhā*'

ktena ca pūjāyām (2.2.12) 203 'a *pada* which ends in the genitive (*ṣaṣṭhī*), also, does not combine in a *tatpuruṣa* compound with a syntactically related *pada* which ends in a *sUP*, contains a *Kta* and denotes *pūjā* 'honouring''

kter mam nityam (4.4.20) 129 'the *taddhita* affix *maP* occurs obligatorily after a nominal stem which ends in *Ktri* (3.3.88 *ḍvitaḥ ktriḥ*), and is used with the instrumental, provided the derivate denotes '...brought about by''

ktvā ca (2.2.20) 187 'a *pada* used in construction with another (*upapada*), referred to by rules 3.4.47 *upadaṃśa*...through 3.4.64 *anvacyā*..., also combines in a *tatpuruṣa* compound with a form ending in *Ktvā*'

krudhadruherṣyāsūyārthānām... (1.4.37) 146 'a *kāraka* which serves as one towards whom anger is directed is termed *sampradāna* when verbal roots having the signification of *krudh* 'to be angry,' *druh* 'to wish harm to' and *īrṣyā* 'not to tolerate' and *asūyā* 'finding fault with qualities' are used'

krudhadruhor upasṛṣṭayor karma (1.4.38) 146 'a *kāraka* which serves as one toward whom anger is directed, is termed *karman* when action is denoted by verbal roots *krudh* and *druh*, used with the preverb *upa*'

kryādibhyaḥ śnā (3.1.81) 36 'affix *Śnā* is introduced after verbal roots listed in the group headed by *ḌkrīÑ* 'buy, barter' when a *sārvadhātuka* (3.1.113 *tiṅśit sārvadhātukam*) affix with the denotatum of *kartṛ* follows'

kvip ca (3.2.76) 30 'affix *KvIP* also occurs after a verbal root, used with or without a preverb, when the root occurs in construction with a *pada* ending in a *sUP*'

khaṭvā kṣepe (2.1.26) 201 'a *pada* which ends in the accusative (*dvitīyā*) combines in a *tatpuruṣa* compound with a syntactically related nominal terminating in *sUP* and containing a stem ending in *Kta*, provided *kṣepa* 'censure' is denoted'

kharavasānayor visarjanīyaḥ (8.3.15) 167 'a replacement in *visarjanīya* comes in place of the final sound segment of a *pada* which ends in *r*, provided a sound denoted by the abbreviatory term *khaR*, or *avasāna* 'cessation of speech, pause,' follows in close proximity'

gatibuddhipratyavasānārthaśabdakarmākarmakāṇām aṇi karttā sa ṇau (1.4.52) 149 'a *kāraka* which serves as the agent of a non-*ṆiC* root that either has the signification of *gati* 'movement,' *buddhi* 'perception,' *pratyavasāna* 'consuming,' or has *śabda* 'noise' as its object, or has no object at all, is termed *karman* when the same root is used with *ṆiC*'

gatiś ca (1.4.59) 123 'items enumerated in the list headed by *pra* are also termed *gati* when used in connection with a verb'

gamamadacarayamaś cānupasarge (3.1.100) 93 'affix *yaT* also occurs after verbal roots *gadA* 'to speak,' *madA* 'to rejoice, be drunk,' *carA* 'to move, consume,' and *yamA* 'to sustain, hold, control' when no *upasarga* 'preverb' is used

gamer iḍ parasmaipadeṣu (7.2.58) 130 'augment *iṬ* is introduced to an affix termed *ārdhadhātuka* which begins with *s* and occurs after an *aṅga*, namely, verbal root *gam* 'to go,' provided an affix termed *parasmaipada* follows'

gargādibhyo yañ (4.1.105) 139 'the *taddhita* affix *yaṬ* occurs after a syntactically related nominal stem which ends in the genitive, and is listed in the group headed by *garga*, provided the derivate denotes a *gotra*-descendant'

gāṅkuṭādibhyo' ñṇinṅit (1.2.1) 63 'an affix, not originally marked with *Ñ* and *Ṇ* as an *it* is treated as marked with *Ṅ* when it occurs after *gāṄ* 'to read, recite,' or after roots of the group headed by *kuṭ*'

gireś ca senakasya (5.4.112) 118 'the *taddhita* affix *ṬaC* also occurs, optionally in the opinion of Senaka, after an *avyayībhāva* compound ending in *giri* 'mountain''

guṇo yaṅlukoḥ (7.4.82) 65 'a *guṇa* vowel comes in place of an *iK*-final *abhyāsa* of an *aṅga* when affix *yaṄ*, and its deletion via *LUK*, follows'

guptijkidbhyaḥ san (3.1.5) 101 'affix *saN* occurs, optionally, to denote *icchā* 'wish' after roots which name the object of, and share the same agent with, the action denoted by *iṣ* 'to wish''

gotrād yūny astriyām (4.1.94) 175 'a *taddhita* affix occurs after a syntactically related nominal stem which signifies a descendant termed *gotra*, provided a non-female *yuvan* 'young male' is to be denoted'

gostriyor upasarjanasya (1.2.48) 193 'the final vowel of a nominal stem ending in *go*, or ending in a feminine affix, is replaced with its short (*hrasva*) counterpart when termed *upasarjana* 'secondary''

ghañi ca bhāvakarmaṇayoḥ (6.4.27) 83 'the penultimate *n* of an *aṅga*, namely, *rañjI* 'to color,' goes through deletion, via *LOPA*, when affix *ŚaP* follows'

gharūpakalpaceladbruvagotramatahateṣu ṅyo' nekāco hrasvaḥ ... (6.3.42) 129 'affix *Ṅī*, at the end of a polysyllabic (*anekāc*) nominal which is used with the denotation of feminine, does not end in *ūṄ*, and shares an identical base for usage with a corresponding masculine, is replaced with its short counterpart when *gha, kalpa, celaT, bruva, mata* and *hata* follow'

ghvasor edhāv abhyāsalopaś ca (6.4.119) 82 'the final sound segment of an *aṅga* termed *ghu*, or an *aṅga* constituted by *as*, is replaced with *e* when *hi* follows, with an additional provision that the *abhyāsa* be deleted by means of *LOPA*'

ḍaḥ si dhuṭ (8.3.39) 138 'augment *dhUṬ* is, optionally, introduced to a *pada* which begins with *s* and occurs after a *pada* ending in *ḍ*, when close proximity between sounds obtains'

ṅamo hrasvād aci ṇamuṇ nityam (8.3.32) 138 'augments *ṅUṬ*, *nUṬ* and *nUṬ* are, obligatorily, introduced at the beginning of a *pada* which begins with a vowel (*aC*) and occurs after a *pada* ending in *ṇ*, *m*, and *n*'

ṅic ca (1.1.53) 86 'a substitute marked with *Ṅ* as an *it* comes in place of the final sound segment of that which is specified with the genitive'

ṅiti hrasvaś ca (1.4.6) 123 'except for *strī*, a form which denotes feminine, ends in *i/u* (short or long) and has a replacement in *iyAṄ* and *uvAṄ* is, optionally, termed *nadī* when an affix marked with *Ṅ* as an *it* follows'

ṅer ām nadyāmnībhyaḥ (7.3.116) 136 'a replacement in *ām* comes in place of affix *Ṅī* when the same occurs after an *aṅga* termed *nadī*, or an *aṅga* terminating in *āP*, or else, an *aṅga* constituted by *Ṅī*'

ṅyāp-prātipadikāt (4.1.1) 54 'an affix, through the end of *adhyāya* five, occurs after that which either ends in affixes marked with *Ṅī* and *āP*, or is termed a nominal stem'

caturthī cāśiṣyāyuṣyamadrabhadrakuśalasukhārthahitaiḥ... (2.3.73) 160 'a *caturthī* 'fourth triplet of *sUP*; dative' occurs, optionally, after a nominal stem when items having the signification of *āyuṣya* 'longevity,' *madra* 'joy,' *bhadra* 'good fortune,' *kuśala* 'well-being,' *sukha* 'comfort, happiness,' *artha* 'prosperity' and *hita* 'benefit' are used in conjunction, and benediction is expressed as the remainder'

caturthī tadarthārthabalihita ... (2.1.36) 41 'a *pada* which ends in the dative (*caturthī*) combines, optionally, in a *tatpuruṣa* compound with a syntactically related *pada* which ends in a *sUP* and denotes *tadartha* 'a thing intended for by the denotatum of the *pada* ending in the dative,' or contains *artha* 'purpose,' *bali* 'sacrificial oblation,' *hita* 'beneficial,' *sukha* 'pleasure' and *rakṣita* 'reserved, protected''

caturthī sampradāne (2.3.13) 146 'a fourth triplet of *sUP* is introduced after a nominal stem when *sampradāna* is denoted'

cārthe dvandvaḥ (2.2.19) 8 'a compound termed *dvandva* is formed in the sense of *ca* 'and''

ciṇ te padaḥ (3.1.60) 45 '*CiṆ* is introduced in place of affix *CLI* after verbal root *pada* 'to go' when *ta*-replacement of *LUṄ* with the denotation of *kartṛ* follows'

ciṇ bhāvakarmaṇoḥ (3.1.66) 96 'affix *CiṆ* occurs in place of *CLI* after a verbal root when a *ta*-replacement of *LUṄ* with the denotatum of *bhāva* and *karman* follows'

cityāgni citye ca (3.1.132) 61 'affixes *KyaP* and *ya* occur, via *nipātana*, to also derive *citya* and *agnicityā*, respectively, when *agni* is denoted'

cuṭū (1.3.7) 37 'an initial sound denoted by *cU* (1.1.69 *aṇudit* ...), or *ṭU* of an affix, is termed *it*'

cchvoḥ śūḍ anunāsike ca (6.4.19) 134 'a *c-ch* and *v* of an *aṅga* is replaced with *ś* and *ūṬH*, respectively, when an affix beginning with a nasal, or one constituted by *KvI*, or one beginning with a sound denoted by the abbreviatory term *jhaL* and marked with *K* or *Ṅ* as an *it*, follows'

cli luṅi (3.1.43) 45 'affix *CLI* occurs after a verbal root when *LUṄ* follows'

cleḥ sic (3.1.44) 45 'affix *CLI* is replaced with *sIC* when *LUṄ* follows'

chandasi niṣṭarkyadevahūyapraṇīyonnīyocchiṣyamaryastaryādhvaryakhanyakhānyadevayajyāṣpṛcchyapratiṣīvyabrahmavādyabhāvyastāvyopacāyyapṛḍāni (3.1.123) 118 'forms such as *niṣṭarkya*, et cetera, are derived, via *nipātana*, in the Vedic'

chandasy ubhayathā (3.4.117)92 'an affix, the Vedic, can be termed *sārvadhātuka* and *ārdhadhātuka*, either way'

janapadaśabdāt... (4.1.166) 124 'the *taddhita* affix *aÑ* occurs to denote an *apatya* 'offspring' after a syntactically related nominal stem which ends in the genitive and names a *janapada* 'principality, cluster of villages' with the signification of a *kṣatriya*'

janapade lup (4.2.81) 101 'a *taddhita* affix which occurs after a syntactically related nominal stem with the signification of *deśa* 'place' is deleted by *LUP*, provided the derivate denotes a particular *janapada* 'principality, cluster of villages' so named' *janikarttuḥ prakṛtiḥ* (1.4.30) 148 'a *kāraka* which serves as material cause from which the agent of *jan* 'to be born' arises is termed *apādāna*'

jarāyā jaras anyatarasyām (7.2.101) 133 '*jaras* comes, optionally, in place of an *aṅga*, namely, *jarā* 'old age,' when a vowel-initial affix termed *vibhakti* follows'

jaśśasoḥ śiḥ (7.1.20) 122 '*Śi* comes in place of the nominal endings *Jas* and *Śas* when they follow an *aṅga* termed neuter'

jāgro 'viciṇṇalṇitsu (7.3.85) 39 'a replacement in *guṇa* comes in place of the *iK*-vowel of an *aṅga*, namely, *jāgṛ*, when an affix termed *sārvadhātuka* and *ārdhadhātuka*, with the exception of *vi*, *CiṆ*, *ṆaL*, or an affix marked with *Ṅ* as an *it*, follows'

jāteś ca (6.3.41) 209 'a feminine form which denotes *jāti* 'class' and shares an identical base for usage in the masculine is not treated as that of its corresponding masculine when a constituent other than *mānin* follows'

jīvati tu vaṃśye yuvā (4.1.163) 104 'the offspring of a grandson, and any other thereafter, is instead, termed *yuvan*, when a *vaṃśya* 'father, or someone equal to him is alive''

juhotyādibhyaḥ śluḥ (2.4.75) 36 'affix *ŚaP* goes through deletion via *ŚLU* when it occurs after roots enumerated in the group headed by *hu* 'to call, perform sacrifice'

jhayaḥ (5.4.11) 84 'the *taddhita* affix *ṬaC* occurs, optionally, after an *avyayībhāva* compound which ends in a sound denoted by the abbreviatory term *jhaY*'

jhayaḥ (8.2.10) 84 'the *m* of *matUP* is replaced with *vA* when *matUP* occurs after that which ends in a sound denoted by the abbreviatory term *jhaY*'

jhalāṃ jaśo' nte (8.2.39) 85 'a sound denoted by *jaŚ* comes in place of a sound denoted by *jhaL* which, in turn, occurs at the end of a *pada*'

jhalo jhali (8.2.26) 85 'the *s* which occurs after a sound denoted by *jhaL* is deleted by *LOPA* when a sound denoted by *jhaL* follows'

ñyādayas tadrājāḥ (5.3.119) 64 'the *taddhita* affixes introduced up to here beginning with *Ñya* (of 5.3.112 *pūgāñño' grāmaṇīpūrvāt*) are termed *tadrāja*'

ṭeḥ (6.4.143) 97 'the *iT* of an *aṅga* termed *bha* is deleted by means of *LOPA* when an affix marked with *Ḍ* as an *it* follows'

ṭvito' thuc (3.3.89) 37 'affix *athuC* occurs after a verbal root marked with *ṬU* as an *it* when *bhāva*, and a *kāraka* other than *kartṛ*, is denoted'

ḍati ca (1.1.25) 64 'number words which end in affix *Ḍati* are termed *ṣaṭ*'

ḍvitaḥ (3.3.88) 37 'affix *Ktṛ* occurs to denote *bhāva* 'root-sense' after a verbal root marked with *ḌU* as an *it*'

ṇvultṛcau (3.1.133) 128 'affixes *ṆvuL* and *tṛC* occur after verbal roots'

taṅānāv ātmanepadam (1.4.100) 27 'replacements of *LA* affixes denoted by the abbreviatory term *taṄ* (3.4.78 *tiptasjhi . . .*), and also those denoted by *āna* (3.2.124 *laṭaḥ śatṛśānacāv . . .*; 3.2.106 *liṭaḥ . . .*), are termed *ātmanepada*'

tatpuruṣaḥ (2.1.22) 62 'a compound termed *tatpuruṣa*'

tatpuruṣaḥ samānādhikaraṇaḥ karmadhārayaḥ (1.2.42) 71 'a *tatpuruṣa* compound whose constituents occur in syntactic coordination (refer to the same thing) is termed *karmadhāraya*'

tatpuruṣo' nañkarmadhārayaḥ (2.43.19) 211 'a *tatpuruṣa* compound which is not a *naÑ*, or a *karmadhāraya*, is termed neuter'

tatprayojako hetuś ca (1.4.55) 104 'a *kāraka* which serves as *prayojaka* 'instigator' of the independent agent is additionally termed *hetu* 'causal agent''

tatra tenedam iti svarūpe (2.2.27) 200 'a *pada* which ends in *saptamī*, or in *tṛtīyā*, combines, optionally, in a *bahuvrīhi* compound with an identical *pada* provided the derivate denotes *iti* 'thus (characterised)''

tatra bhavaḥ (4.3.57) 95 '*taddhita* affixes, hereafter, are introduced in the sense of *tatra bhavaḥ* 'born, of found, there'

tatropapadaṃ saptamīstham (3.1.92) 61 'that which is specified there (in this domain of 3.1.91 *dhātoḥ*) by means of the locative (*saptamī* seventh triplet of *sUP*') is termed an *upapada* 'conjoined word''

tathāyuktaṃ cānīpsitam (1.4.50) 149 'a *kāraka* which serves as something not desired by the agent is still termed *karman* if it is related with the action in a manner similar to that which is most desired by the agent'

tad aśiṣyaṃ saṃjñāpramāṇatvāt (1.2.53) 210 'it (retention of original number and gender of a word) ought not to be taught since it is dependent upon usage'

tad asyāstīty asminn iti matup (5.2.94) 8 'a *taddhita* affix, namely, *matUP*, occurs to denote the sense of the genitive (*ṣaṣṭhī; tasya*), or of the locative (*saptamī; tasmin*) after a syntactically related nominal stem which ends in the nominative (*prathamā;tat*), provided it is qualified with the denotatum of *asti* 'is, exists''

taddhitasya (6.1.64) 79 'of that which is termed a *taddhita*'

taddhitāḥ (4.1.76) 26 'here begins the domain of affixes termed *taddhita*'

taddhitārthottarapada... (2.1.51) 139 'a *pada* which ends in a *sUP* and contains a stem denoting *diś* 'directional,' or *saṃkhyā* 'number,' combines in a *tatpuruṣa* compound with a syntactically related coreferential *pada* which ends in a *sUP*, when either the meaning of a *taddhita* affix finds its scope, or a third word is to follow, or else, *samāhāra* 'collection, grouping' is denoted'

taddhiteṣv acām ādeḥ ... (7.2.117) 174 'an *ā* comes in place of initial among vowels of an *aṅga*, namely, *devikā, śiṃśapā, dityavāt, dīrghasattra* and *śreyas*, when a *taddhita* affix marked with *Ñ, Ṇ* and *K* follows, and the context is that of a replacement in *vṛddhi*'

tad vahati rathayugaprāsaṅgam (4.4.76) 64 'the *taddhita* affix *yaT* occurs after nominal stems *ratha* 'chariot,' *yuga* 'yoke' and *prāsaṅga* 'trial yoke' when the stems are used with the accusative and derivates denote the sense of *vahati* '...carrying ...''

tanādikṛñbhya uḥ (3.1.79) 36 'affix *u* occurs after verbal roots enumerated in the class headed by *tanU* 'to stretch, expand,' and also after verbal root *kṛÑ* 'to make, do,' when a *sārvadhātuka* affix with the denotation of *kartṛ* follows'

taraptamapau ghaḥ (1.1.22) 121 'affixes *taraP* and *tamaP* are termed *gha*'

tavyattavyānīyaraḥ (3.1.96) 5 'affixes *tavya, tavyaT* and *anīyaR* are introduced after verbal roots'

tasau matvarthe (1.4.19) 153 'a form which ends in *-t* and *-s* is termed *bha* when an affix denoting the sense of *matUP* follows'

tasmād ity uttarasya (1.1.67) 45 'that which is used with an ablative specifies the left context of an operation on what follows'

tasminn iti nirdiṣṭe pūrvasya (1.1.66) 45 'that which is used with the locative specifies the right context of an operation on what precedes'

tasmai hitam (5.1.5) 64 'a *taddhita* affix occurs as specified to denote the sense of 'beneficial to that' after a syntactically related nominal stem which ends in the *caturthī* 'fourth triplet of *sUP*,' dative'

tasya paramāmreḍitam (8.1.2) 124 'the final of this iterated sequence is termed *āmreḍita*'

tasya pūraṇe ḍaṭ (5.2.48) 'the *taddhita* affix *ḌaT* occurs to denote the sense of *pūraṇa* 'that by which something is brought to completion, ordinal number' after a syntactically related nominal stem which signifies number and ends in the genitive (*ṣaṣṭhī*)'

tasya lopaḥ (1.3.9) 'an item termed *it* goes through deletion via *LOPA*'

tasya samūhaḥ (4.2.37) 68 'a *taddhita* affix, namely, *aṆ*, occurs after the first among syntactically related nominal *padas* which ends in the genitive (*ṣaṣṭhī*), provided the derivate denotes 'a collection or group of that'

tasyāpatyam (4.3.92) 72 'a *taddhita* affix, namely *aṆ*, occurs as ruled to denote the sense of *apatya* 'offspring' after the first among syntactically related nominal stems ending in the genitive (*ṣaṣṭhī*)'

tāny ekavacanadvivacanabahuvacanāny ekaśaḥ (1.4.102) 69 'the individual members of each triad of *sUP* are termed *ekavacana* 'singular,' *dvivacana* 'dual' and *bahuvacana* 'plural' respectively'

tābhyām anyatroṇādayaḥ (3.4.75) 39 'affixes *uṆ*, et al., also occur with a non-dative and ablative denotata'

tiṅastrīṇitrīṇi prathamamadhyamottamāḥ (1.4.101) 69 'the three elements of each triad of *tiṄ* is termed *prathama* 'first, third,' *madhyama* 'second' and *uttama* 'first, best,' respectively'

tiṅśit sārvadhātukam (3.4.113) 24 'that which is denoted by *tiṄ*, and also that which is marked with *Ś* as an *it*, is termed *sārvadhātuka*' *tiptasjhisiptastha...* (3.4.78) 25 '*tiP/ tas/ jhi; siP/ thas/ tha; miP/ vas/ mas; ta/ ātām/ jha; thās/ athām / dhvam; iṬ/ vahi/ mahiṄ* are introduced in place of *LA*-affixes'

tudādibhyaḥ śaḥ (3.1.77) 36 'affix *Śa* is introduced after verbal roots listed in the group headed by *tud* 'to torment' '

tumarthāc ca bhāvavacanāt (2.3.15) 160 'a *caturthī* 'dative' occurs after a nominal stem which terminates in an affix with the denotatum of action and which is synonymous with denotatum of *tumUN*'

tulyāsyaprayatnaṃ savarṇam (1.1.9) 121 'a sound which shares same articulatory effort in the mouth with another is termed homogeneous (*savarṇa*)'

tṛjakābhyāṃ kartari (2.2.15) 28 'a *pada* which ends in the genitive (*ṣaṣṭhī*) and denotes *karman* 'object,' does not combine in a *tatpuruṣa* compound with a syntactically related nominal *pada* which ends in a *sUP*, contains a stem in *tṛC* and *aka*, and denotes *kartṛ*'

tṛtīyā tatkṛtārthena guṇavacanena (2.1.30) 201 'a *pada* which ends in the instrumental (*tṛtīyā*) combines, optionally, in a *tatpuruṣa* compound with a syntactically related *pada* which ends in a *sUP*, and either denotes (*i*) a quality produced by the *pada* ending in *tṛtīyā*, or (*ii*) contains *artha*'

tṛtīyāsaptamyor bahulam (2.4.84) 199 'a *tṛtiyā* and *saptamī* is variously replaced with *am* when it occurs after an *avyayībhāva* compound ending in *a*'

tṛṣimṛṣikṛṣeḥ kāśyapasya (1.2.25) 118 'affix *Ktvā*, in the opinion of *Kāśyapa*, is not treated as marked with *K* as an *it* when it occurs with *iṬ* after verbal roots *tṛṣA* 'to be thirsty,' *mṛṣA* 'to endure, tolerate' and *kṛṣA* 'to be lean''

te tadrājāḥ (4.1.172) 104 'the *taddhita* affixes which occur after a syntactically related nominal stem ending in the genitive and naming a *janapada* with the signification of a *kṣatriya* are termed *tadrāja*'

tena krītam (5.1.37) 64 'a *taddhita* affix occurs as specified to denote the sense of *krītam* after a syntactically related nominal stem which ends in the instrumental (*tṛtīyā*)'

tena tulyaṃ kriyā ced vatiḥ (5.1.115) 65 'the *taddhita* affix *vatI* occurs to denote the sense of *tulya* 'same, equal' after a syntactically related nominal stem ending in *tṛtīyā* 'instrumental,' provided what is *tulya* is also *kriyā* 'action''

tena divyati khanati jayati jitam (4.4.2) 64 'the *taddhita* affix *ṭhaK* occurs after a nominal stem which ends in the instrumental (*tṛtiyā*) when derivates signify *dīvyati* '...sports, plays,' *khanati* '...digs,' *jayati* '...wins' and *jitam* '...won''

tena raktaṃ rāgāt (4.2.1) 63 'a *taddhita* affix, particularly *aṆ* (3.1.83 *prāg dīvyato' ṇ*), occurs after a syntactically related nominal stem which ends in *tṛtīyā* and signifies 'color' when the derivate denotes 'colored by that'

tena saheti tulyayoge (2.2.28) 187 'a *pada* constituted by *saha* 'with' combines, optionally, in a *bahuvrīhi* compound with a *pada* which ends in the *tṛtīyā* 'instrumental' provided referents of both share same relationship with the action'

tyadādīnām aḥ (7.2.102) 84 'the final sound segment of an *aṅga* constituted by items enumerated in the list headed by *tyad* 'that' is replaced with *a* when an affix termed *vibhakti* follows'

tricaturoḥ striyāṃ tisṛcatasṛ (7.2.99) 132 '*tisṛ* and *catasṛ* come in place of an *aṅga*, namely, *tri* and *catur*, when they are used with the signification of feminine and an affix termed *vibhakti* follows'

tres trayaḥ (6.3.48) 48 'the final sound segment of *tri* is replaced with *trayas* when a constituent denoting *saṃkhyā* 'number,' with the exception of *aśīti* 'eighty,' combines to follow and the compound is not a *bahuvrīhi*'

tres trayaḥ (7.1.53) 63 '*traya* comes in place of an *aṅga*, namely, *tri* 'three,' when the genitive plural *ām* follows'

dāder dhātor ghaḥ (8.2.32) 85 'the *h* of a verbal root which begins with *d* is replaced with *gh* when *h* occurs at the end of a *pada*, or occurs followed by a sound denoted by the abbreviatory term *jhaL*'

dādhā ghv adāp (1.1.20) 121 'roots which yield a form in *dā* and *dhā*, except for *dāP* 'to cut' and *daiP*, are termed *ghu*' *dikcchabdebhyaḥ saptamīpañcamīprathamābhyo digdeśakāleṣv astātiḥ* (5.3.27) 65 'the *taddhita* affix *astātI* occurs after a nominal stem which ends in *saptamī, pañcamī,* and *prathamā* when *diś* 'direction,' *deśa* 'location, place' and *kāla* 'time' are denoted'

diṅnāmāny antarāle (2.2.26) 208 'a *pada* which ends in a *sUP* and names *diś* 'direction' combines, optionally, in a *bahuvrīhi* compound with a *pada* which ends in a *sUP* and denotes *diś,* provided the compound signifies *antarāla* 'intermediate direction'

divaḥ karma ca (1.4.43) 149 'a *kāraka* which serves as a means, more than any other, is also termed *karman* when the action is denoted by verbal root *divA* 'to play''

divādibhyaḥ śyan (3.1.69) 36 'affix *ŚyaN* is introduced after a verbal root listed in the group headed by *div* 'to sport, play''

dīpajanapūritāyi ... (3.1.61) 45 '*CiN* occurs, optionally, in place of *CLI* after verbal roots *dīpI* 'to shine,' *janĪ* 'to be born,' *budhA* 'to know, perceive,' *pūrĪ* 'to overfill,' *tāyR̥* 'to stretch' and *OpyāyĪ* 'to grow' when a *ta*-replacement of *LUṄ* with the denotatum of *kartr̥* follows'

dīrghaṃ ca (1.4.12) 124 'a long (*dīrgha*) is also termed *guru*'

dvandve ghi (2.2.32) 132 'a *pada* which terminates in *ghi* (1.4.7 *śeṣo ghy asakhi*) is placed first in a *dvandva* compound'

dvigur ekavacanam (2.4.1) 63 'a compound termed *dvigu* carries the denotatum of one'

dviguś ca (2.1.23) 104 'a compound termed *dvigu* (2.1.52 *saṃkhyāpūrvo dviguḥ*) is also termed *tatpuruṣa*'

dvigor lug anapatye (4.1.88) 139 '*LUK* comes in place of a *taddhita* affix which, when not denoting an offspring, serves as a condition for forming a *dvigu* and signifies the sense of affixes introduced prior to *dīvyati*'

dvitīyatr̥tīyacaturthatūryāṇy anyatarasyām (2.2.3) 20 'a *pada* which ends in a *sUP* and contains *dvitīya* 'second,' *tr̥tīya* 'third,' and *caturtha* or *turya* 'fourth,' optionally, combines in a *tatpuruṣa* compound with a syntactically related *pada* which ends in a *sUP* and refers to a single substance with parts'

dvitīyāśritātītapatitagatātyartaprāptāpannaiḥ (2.1.24) 200 'a *pada* ending in the accusative (*dvitīyā*) combines, optionally, in a *tatpuruṣa* compound with a syntactically related *pada* ending in a *suP* and containing *śrita* 'resorted to, attained,' *patita* 'fallen into,' *atīta* 'gone through, over or beyond' and *āpanna* 'gotten to''

dvir vacane 'ci (1.1.59) 113 'a replacement of *aC* is treated as its substituendum when it is followed by an affix consisting of, or beginning with, a vowel, and conditioning doubling, provided doubling alone is to be performed'

dvyekayor dvivacanaikavacane (1.4.22) 167 'a dual and singular occur when duality and singularity is denoted'

dhātusambandhe pratyayāḥ (3.4.1) 63 'the following affixes are introduced when a relationship between actions is denoted'

dhātoḥ (3.1.91) 54 'an affix occurs after a verbal root ...'

dhātoḥ (6.1.162) 61 'after a verbal root ...'

dhātoḥ karmaṇaḥ samānakartr̥kād icchāyāṃ vā (3.1.7) 91 'affix *saN* occurs, optionally, to denote *icchā* 'wish' after roots which name the object of, and share the same agent with, *iṣ* to wish'

dhātor ekāco halādeḥ saṃś ca (3.1.22) 45 'affix *yaṄ* occurs optionally after a monosyllabic verbal root which begins with a consonant when *kriyāsamabhihāra* 'repetitious, or intense, action' is denoted'

dhārer uttamarṇaḥ (1.4.35) 148 'a *kāraka* which serves as a creditor is termed *sampradāna* when *dhāri* 'to owe (causative of *dhr̥Ñ*)' is used'

dhinvikr̥ṇvyor a ca (3.1.80) 47 'affix *u* occurs after verbal roots *dhinvI* 'to please, satisfy, be satisfied' and *kr̥ṇvI* 'to hurt, injure' when a *sārvadhātuka* affix which denotes *kartr̥* follows; additionally, a root-final sound is replaced with *a*'

dhruvam apāye'pādānam (1.4.24) 48 'a *kāraka* which serves as *dhruva* 'fixed (point of reference)' is termed *apādāna* 'ablative' when *apāya* 'movement away from' is denoted'

dhvāṅkṣeṇa kṣepe (2.1.42) 189 'a *pada* which ends in the locative (*saptamī*) combines in a *tatpuruṣa* compound with a syntactically related *pada* which ends in a *sUP* and contains a constituent denoting *dhvāṅkṣa* 'crow,' provided contempt (*kṣepa*) is denoted'

na kroḍādibahvacaḥ (4.1.56) 136 'affix *ṄīṢ* does not occur after a nominal stem which ends in an *upasarjana* 'secondary' constituent with the signification of *svāṅga* 'one's limb' and is either listed in the group headed by *kroḍa* 'lap, flank of a horse,' or else, consists of many vowels'

nañ (2.2.6) 204 'a *pada* constituted by *naÑ* 'not' combines, optionally, in a *tatpuruṣa* compound with a syntactically related *pada* which ends in a *sUP*'

nadībhiś ca (2.1.20) 128 'a *pada* which denotes *saṃkhyā* combines in an *avyayībhāva* compound, optionally, with a syntactically related *pada* denoting *nadī* 'river'

na dhātulopa ārdhadhātuke (1.1.4) 125 'vowels denoted by *guṇa* and *vṛddhi* do not come in place of an *iK* when an *ārdhadhātuka* affix, which conditions deletion of part of the root, follows'

na nirdhāraṇe (2.2.10) 202 'a *pada* which ends in the genitive (*ṣaṣṭhī*) and denotes *nirdhāraṇa* 'setting apart, singling out' does not combine in a *tatpuruṣa* compound with a syntactically related *pada* ending in a *sUP*'

napuṃsakasya jhaly acaḥ (7.1.72) 109 'augment *nUM* is introduced after last among vowels of a neuter presuffixal base (*aṅga*) which ends in a sound denoted by the abbreviatory symbol *jhaL*, or ends in a vowel (*aC*)'

napuṃsakād anyatarasyām (5.4.109) 199 'the *taddhita* affix *ṬaC* occurs, optionally, after a neuter nominal stem which ends in *an* and constitutes the final constituent of an *avyayībhāva* compound'

napuṃsake bhāve ktaḥ (3.3.114) 41 'affix *Kta* occurs after a verbal root when root-sense is denoted in the neuter'

na bahuvrīhau (1.1.29) 109 'items listed in the group headed by *sarva* 'all' are not termed *sarvanāman* when they occur in a *bahuvrīhi* (2.2.23 *śeṣo bahuvrīhiḥ*) compound'

na lumatāṅgasya (1.1.63) 66 'an operation relative to a pre-suffixal base (*aṅga* 1.4.13 *aṅgasya*) does not apply if the following affix goes through deletion via that (a term) which contains *LU*'

na veti vibhāṣā (1.1.44) 114 'or not (*na vā*) is termed *vibhāṣā* (option)'

nas taddhite (6.4.144) 199 'the *ṭi* (1.1.64 *acontyādi ṭi*) of an *aṅga*, termed *bha*, which ends in *n* is deleted via *LOPA* when a *taddhita* affix follows'

nāj jhalau (1.1.10) 121 'sounds denoted by *aC* (vowels) are not termed *savarṇa* 'homogeneous' with sounds denoted by *haL* (consonants)'

nāvyayībhāvād ato' pañcamyāḥ (2.4.83) 196 'a *sUP* which occurs after an *avyayībhāva* compound ending in *aT* is not deleted; a *sUP*, if not a *pañcamī* 'ablative,' is replaced with *am*, instead'

nāsikodaroṣṭhajaṅghādantakarṇaśṛṅgāc ca (4.1.55) 136 'affix *ṄīṢ* occurs, optionally, to denote feminine after a nominal stem which ends in an *upasarjana* with the signification of *svāṅga* 'one's limb,' namely, *nāsikā* 'nose,' *udara* 'belly,' *oṣṭha* 'lip,' *jaṅghā* 'thigh,' *danta* 'tooth,' *karṇa* 'ear' and *śṛṅga* 'horn'

nityaṃ krīḍājīvikayoḥ (2.2.17) 28 'a *pada* which ends in the genitive (*ṣaṣṭhī*), obligatorily, combines in a *tatpuruṣa* compound with a syntactically related *pada* which ends in a *sUP* and contains *aka*, provided *krīḍā* 'sport' and *jīvikā* are denoted'

niṣṭhā (2.2.36) 121 'a *pada* which contains a stem in *niṣṭhā* (3.2.102 *niṣṭhā*) is placed first in a *bahuvrīhi* compound'

niṣṭhā (3.2.102) 159 'an affix termed *niṣṭhā* (1.1.26 *ktaktavatū niṣṭhā*) occurs after a verbal root when action is denoted in the past'

niṣpravāṇiś ca (5.4.160) 92 'the *taddhita* affix *kaP* does not occur, via *nipātana*, after a compound termed *bahuvrīhi*, namely, *niṣpravāṇi*, a just about ready basket'

nīcair anudāttaḥ (1.2.30) 122 'a vowel which is articulated (with a) lower (pitch) at its place of articulation is termed low-pitched (*anudātta*)'

nṝn pe (8.3.10) 164 '*nṝn* is replaced with *rU* when *pA* follows and close proximity between sounds finds its scope'

neṭi (7.2.4) 137 'a vowel termed *vṛddhi* does not come in place of the vowel of an *aṅga* ending in a consonant when *iṬ*-initial *sIC* followed by an affix termed *parasmaipada* follows' *paṅktiviṃśatitriṃśaccatvāriṃśatpañcāśatṣaṣṭisaptatyaśītinavatiśatam* (5.1.59) 118 'the nominal stems *paṅkti* 'row, meter,' *vimśati* 'twenty,' *triṃśat* 'thirty,' *catvāriṃśat* 'forty,' *pañcāśat* 'fifty,' *ṣaṣṭi* 'sixty,' *saptati* 'seventy,' *aśīti* 'eighty,' *navati* 'ninety,' and *śata* 'hundred' are derived via *nipātana* to denote a measure'

pañcamī bhayena (2.1.37) 202 'a *pada* which ends in the ablative (*pañcamī*) combines, optionally, in a *tatpuruṣa* compound with a syntactically related *pada* which ends in a *sUP* and contains *bhaya* 'fear''

padasya (8.1.16) 62 'of that which is termed a *pada*'

padāntasya (8.4.37) 138 'a replacement in *ṇ* does not come in place of a *n* which occurs at the end of a *pada*'

paraval liṅgaṃ dvandvatatpuruṣayoḥ (2.4.26) 41 'gender of a *dvandva* and *tatpuruṣa* compound is assigned in accord with the gender of its final constituent'

paraś ca (3.1.2) 45 'and an affix occurs after...'

paraḥ sannikarṣaḥ saṃhitā (1.4.109) 196 'extreme proximity between sounds is termed *saṃhitā*'

parasmaipadānāṃ ṇalatususthalathusaṇalvamāḥ... (3.4.82) '*ṆaL*, *atus*, *us*; *thaL*, *athus*, *a*; *ṆaL*, *va* and *ma* come in place of a replacement of *LIṬ* termed *parasmaipada*'

parājer asoḍhaḥ (1.4.26) 147 'a *kāraka* which serves as *asoḍha* 'unbearable' is termed *apādāna* when action is denoted by verbal root *ji* 'to win' used with the preverb *parā*'

parādiś chandasi bahulam (6.2.199) 195 'the initial syllable of a following constituent, namely, *saktha*, et cetera, is, variously, marked with *udātta* in the Vedic'

parikrayaṇe sampradānam anyatarasyām (1.4.44) 123 'a *kāraka* which serves as a means par excellence is, optionally, termed *sampradāna* 'dative' when *prikrayaṇa* 'hiring on stipulated wages' is denoted'

parikhāyā ḍhañ (5.1.17) 64 'the *taddhita* affix *ḍhaÑ* occurs to denote the sense of genitive, or of locative, after syntactically related nominal stem *parikhā* 'moat, ditch' when ending in the nominative, provided the same is in syntactic coordination with *syāt* to denote the sense of 'there is a possibility of that' or 'it is possible in there''

parinivibhyaḥ sevasitasayasivusahasuṭstusvañjām (8.3.70) 65 'a *mūrdhanya* 'retroflex sound' comes in place of the *s* of verbal roots *seva, sita, saya, sivU, ṣaha, sUṬ, stu*, and *svañja*, when used after the preverbs *pari, ni*, and *vi*, when *aṬ*, and also when an *abhyāsa* intervenes in close proximity'

pātre samitādayaś ca (2.1.48) 202 'items enumerated in the list headed by *pātresamit* are also termed *tatpurusa* when *kṣepa* 'censure' is denoted'

pādaśatasya saṃkhyāder vīpsāyāṃ vun lopaś ca (5.4.1) 64 'the *taddhita* affix *vuN* occurs after a nominal stem which ends in *pada* 'quarter' and *śata* 'hundred' and begins with a number (*saṃkhyā*) with an additional provision that the final sound segment of *pāda* and *śata* be replaced with *LOPA*, when derivates denote *vīpsā* 'repetition, pervasion''

pāyyasaṃnāyyanikāyyadhāyyā mānahavirnivāsasāmidhenīsu (3.1.129) 119 'affix *ṆyaT* occurs to derive *pāyya, sānnāya, nikāyya* and *dhāyyā* when derivates denote *māna* 'standard of measure,' *havi* 'oblation,' *nivāsa* 'residence' and *sāmidhenī* 'a particular hymn''

pitṛvyamātulamātāmahāḥ (4.2.36) 139 'the words *pitṛvya, mātula, mātāmaha* and *pitāmaha* are derived, via *nipātana*'

puṃvatkarmadhārayajātīyadeśīyeṣu (6.3.42) 98 'the form of a nominal which denotes feminine, does not end in affix *ūṄ* and shares an identical base for usage with a corresponding masculine, is treated as that of its masculine when this same combines in a *karmadhāraya* compound and affixes *jātīyaR* and *deśīyaR* follow'

puṃsi saṃjñāyāṃ ghaḥ prāyeṇa (3.3.118) 41 'affix *GHa* occurs, generally, after a verbal root when the derivate names a *karaṇa*, or *adhikaraṇa*, in the masculine'

pugantalaghūpadhasya ca (7.3.86) 86 'a replacement in *guṇa* comes in place of the *iK*-vowel of an *aṅga* which ends in augment *pUK*, or contains a vowel termed *laghu* as next to its last, when an affix termed *sārvadhātuka* and *ārddhadhātuka* follows'

puri luṅ cāsme (3.2.122) 117 'affix *LUṄ* occurs, optionally, with *LAṬ* after a verbal root which co-occurs with *purā*, and is not used in conjunction with *sma*, provided the action which is not current is denoted in the past' *pūgāñ ño' grāmaṇīpūrvāt* (5.3.112) 124 'the *taddhita* affix *Ñya* occurs after a nominal stem which signifies *pūga* and does not include *grāmaṇī* as its initial constituent'

pūraṇaguṇasuhitārthasadavyayasamānādhikaraṇena (2.2.11) 203 'a *pada* which ends in the genitive (*ṣaṣṭhī*) does not combine in a *tatpuruṣa* compound with a *pada* which ends in a *sUP* and entails *pūraṇa* 'that which ends in a *pūraṇa* suffix,' *guṇa* 'that which denotes quality,' *suhitārtha* 'that which denotes satisfaction,' *sat* 'that which ends in affixes termed *sat*,' *avyaya* 'indeclinable' and *samānādhikaraṇa* 'that which is used in syntactic co-ordination'

pūrvakālaikasarvajaratpurāṇanavakevalāḥ samānādhikaraṇena (2.1.49) 205 'a *pada* which ends in a *sUP* and contains a stem that either denotes *pūrvakāla* 'something which naturally precedes the other,' or is constituted by *eka* 'one,' *sarva* 'all,' *jarat* 'aged,' *purāṇa* 'ancient, old,' *nava* 'new' and *kevela* 'only,' combines optionally in a *tatpuruṣa* compound with a syntactically related coreferential *pada* which ends in a *sUP*'

pūrvatrāsiddham (8.2.1) 5 'that which follows, here, is treated as if suspended in view of what precedes'

pūrvaparāvaradakṣiṇottarāparādharāṇi vyavasthāyām asaṃjñāyām (1.1.34) 39 'items such as *pūrva, para, avara, dakṣiṇa, uttara, apara* and *adhara* are, optionally, termed *sarvanāman* when (*i*) operations relative to *Jas* are to be performed, and (*ii*) what is being denoted is *vyavasthā* 'relative difference, or location in time or space,' and not a name (*saṃjñā*)'

pūrvavat sanaḥ (1.3.62) 114 'an *ātmanepada* affix occurs after a verbal root ending in affix *saN*, in a manner similar to which it occurs after its non-*saN* counterpart'

pūrvasadṛśasamonārthakalahanipuṇamiśraślakṣṇaiḥ (2.1.31) 201 'a *pada* which ends in the instrumental (*tṛtīyā*) combines in a *tatpuruṣa* compound, optionally, with a syntactically related *pada* which ends in a *sUP*, and contains *pūrva, sadṛśa, sama, ūna*, and its synonyms, *kalaha, miśra* and *ślakṣṇa*'

pūrvāparādharottaramekadeśinaikādhikaraṇe (2.2.1) 204 'a *pada* which ends in a *sUP* and contains *pūrva, apara, adhara*, or *uttara*, combines optionally with a syntactically related *pada* which ends in a *sUP* and refers to a single substance (*ekādhikaraṇa*) with parts (*ekadeśin*)'

pūrvo' bhyāsaḥ (6.1.4) 103 'the first of the two elements gotten via iteration is termed *abhyāsa*'

por as upadhāt (3.1.98) 93 'affix *yaT* occurs after a verbal root which ends in a sound denoted by *pU* and contains *aT* in its penultimate position (*upadhā*)'

pratyayaḥ (3.1.1) 45 'an affix ...'

pratyayalope pratyayalakṣaṇam (1.1.62) 8 'an operation characteristic of an affix obtains even when the affix goes through deletion via *LOPA*'

partyayasthātkātpūrvasyāt... (7.3.44) 178 'a short vowel, namely, *i*, comes in place of an *a* which, in turn, occurs before *k* within an affix, provided *āP*, not used after a *sUP*, follows'

pratyayasya lukślulupaḥ (1.1.61) 99 'non-appearance of an affix is termed *LUK, ŚLU* and *LUP*'

pratyāṅbhyāṃ śruvaḥ pūrvasya karttā (1.4.40) 148 'a *kāraka* which serves as the agent of a prior action (of requesting) is termed *sampradāna* when *śru* 'to hear' is used with the preverb *prati* and *āN*'

prathamacaramatayālpārdhakatipayanemāś ca (1.1.33) 86 '*prathama* 'first,' *carama* 'last,' *alpa* 'little, less,' *ardha* 'half,' *katipaya* 'some,' *nema* 'several,' and words which end in affix *tayaP* (5.2.42 *saṃkhyāyā* ...) as well, are, optionally, termed *sarvanāman* when operations relative to *Jas* are to be performed'

prathamānirdiṣṭaṃ samāsa upasarjanam (1.2.43) 20 'that which is specified with the nominative (*prathamā*) in formation of a compund is termed *upasarjana* (secondary)'

prāk kaḍārāt samāsaḥ (2.1.3) 64 'that which is enumeratea henceforth, prior to *kaḍāra*, (2.2.38 *kaḍārāḥ karmadhārave*), is termed *samāsa*'

prāk krītāc chaḥ (5.1.1) 64 'a *taddhita* affix, namely, *cha*, occurs, henceforth prior to *krītāt* (5.1.37 *tena krītam*), after a nominal stem'

prāk sitād aḍ vyavāye' pi (8.3.63) 65 'a corresponding *mūrdhanya*, from here on prior to *sita* (8.3.70 *parinivibhyaḥ sevasita...*), comes in place of a *s* which does not occur at the end of a *pada*, whether or not augment *aT* intervenes'

prāg ivāt kaḥ (5.3.70) 65 'a *taddhita* affix, namely *ka*, occurs henceforth prior to *ive pratikṛtau* (5.3.96), after a nominal stem' *prāgg hitād yat* (4.4.75) 64 'a *taddhita* affix, namely *yaT*, occurs as specified, henceforth prior to *hitād* (5.1.1 *tasmai hitam*)'

prāg diśo vibhaktiḥ (5.3.1) 65 'the *taddhita* affixes which, from here on prior to *diś* (5.3.27 *dikśabdebhyaḥ* ...), optionally occur after nominal stems are termed *vibhakti*'

prāg dīvyato' ṇ (4.1.83) 64 'a *taddhita* affix, namely *aṆ*, optionally occurs, from here on prior to *dīvyati* (4.4.2 *tena dīvyati*...) after the first among syntactically related nominal stems'

prāg rīśvarān nipātāḥ (1.4.56) 62 'what are here enumerated prior to *rīśvara* (1.4.97 *adhirīśvare*) are termed *nipātas*'

prāg vateṣ ṭhañ (5.1.18) 64 'a *taddhita* affix, namely *ṭhaÑ*, occurs after a nominal stem to denote the sense of affixes introduced by rules prior to that which contains *vatI* (5.1.115 *tena tulyam*...)'

prāg vahateṣ ṭhak (4.4.1) 64 'a *taddhita* affix, namely *ṭhaK*, occurs henceforth as specified prior to *vahati* (4.2.76 *tadvahati*...), after a nominal stem'

prātipadikārthaliṅgaparimāṇavacanamātre prathamā (2.3.46) 55 'a *prathamā* 'first triplet of *sUP*' occurs when only *prātipadikārtha* 'stem-notion,' *liṅga* 'gender,' *praimāṇa* 'measure' and *vacana* 'number' is to be expressed'

prādayaḥ (1.4.58) 123 'items enumerated in the list headed by *pra* are termed *nipāta* 'particle' when they do not denote *sattva* 'thing''

prādiś chandasi (6.2.199) 167 'the initial (syllable) of a following (constituent), namely *saktha*, et cetera, is variously marked with *udātta* in the Vedic'

phalegrahir ātmaṃbhariś ca (3.2.26) 199 'affix *iN* occurs via *nipātana*, also, in deriving *phalegrahiḥ* and *ātmaṃbhariḥ*'

bahugaṇavatuḍatisaṃkhyā (1.1.23) '*bahu* 'many' and *gaṇa* 'group, class,' and those which end in affixes *vatU* (5.2.39 *yattadetebhyaḥ* ...) and *ḍati* (5.2.41 *kimaḥ* ...) are termed *saṃkhyā*'

babhuvrīhau prakṛtyā pūrvapadam (6.2.1) 64 'accent of the initial constituent of a *bahuvrīhi* compound remains as it originally was'

bhasya (6.4.129) 62 'of a *bha* (1.4.18 *yaci bham*) of an *aṅga*'

bhāvakarmaṇoḥ (1.3.13) 158 'an *ātmanepada* affix occurs after a verbal root when *bhāva* 'state, root-sense' and *karman* 'object' is denoted'

bhāva ca (4.4.144) 65 'the *taddhita* affix *tātiL* occurs in the Vedic, also, after nominal stems *śiva*, *śam* and *ariṣṭa* when *bhāva* 'root-sense' is denoted'

bhiyo hetubhaye ṣuk (7.3.40) 97 'augment *ṣUK* is introduced to an *aṅga*, namely, *bhī* 'to fear,' when the signification is *hetubhaya* 'fear to causal agent' and affix *Ṇī* follows'

bhītrārthānāṃ bhayahetuḥ (1.4.25) 147 'a *kāraka* which serves as source of fear (*bhayahetu*) is termed *apādāna* when verbal roots having the signification of *bhī* 'to fear' and *trā* 'to protect' are used'

bhīmādayo' pādāne (3.4.74) 39 'the words *bhīma*, et cetera, derive, via *nipātana*, when *apādāna* is denoted'

bhīhṛbhṛhuvāṃ śluvac ca (3.1.39) 47 'affix *ām* occurs optionally after verbal roots *ÑIbhī* 'to fear,' *hrī*, 'to be bashful, be ashamed,' *ḌUbhṛÑ* 'to hold, provide,' and *hu* 'to perform sacrifice' provided *LIṬ* follows, and the usage is not from the *mantra* part of the Vedic; in addition, these roots undergo operations similar to those which occur when *ŚLU* follows'

bhuvaḥ prabhavaḥ (1.4.31) 123 'a *kāraka* which serves as source of origin for the agent of *bhū* 'to be, become' is termed *apādāna*'

bhūte (3.2.84) 63 'an affix, hereafter, occurs after a verbal root when the action is denoted in the past (*bhūte*)'

bhūvādayo dhātavaḥ (1.3.1) 36 'verbal roots listed in the group headed by *bhū*, and others of its like, are termed *dhātu*'

bhṛñām it (7.4.76) 47 'a short comes in place of the long final vowel of an *aṅga*, also when affix *CvI* follows'

bhṛśādibhyo bhuvy acveḥ lopaś ca halaḥ (3.1.12) 46 'affix *KyaṄ* occurs, optionally, to denote the sense of *bhū* 'to be, become' after nominal stems enumerated in the list headed by *bhṛśa* 'bountiful, bright' when the stems do not end in affix *CvI*; in addition, any final consonant of the stem goes through deletion by *LOPA*' *bhrasjo ropadhayo ram anyatarasyām* (6.4.47) 120 'augment *rAM* is introduced, optionally, in place of the sequence of *r* and next to the last sound segment of an *aṅga*, namely, *bhrasj* 'to roast,' when an affix termed *ārdhadhātuka* follows'

bhrājabhāsadhurvidyutorjipṝjugrāvastuvaḥ kvop (3.2.177) 64 'affix *KvIP* occurs to denote *kartṛ* after verbal roots *bhrājṚ* and *bhāsṚ* 'to shine,' *dhurVĪ* 'to injure,' *dyuT* 'to shine,' *ūrjA* 'to be strong,' *pṝ* 'to fill,' *ju* 'to move' and *sbuÑ* 'to praise' used with *grāva*, when the agent performs the action at the current time because of his nature, sense of duty, or skill'

bhrātari ca jyāyasi (4.1.164) 176 'the offspring of a grandson, and any other thereafter, is termed *yuvan*, also when his older brother (instead of his father, or any other like him) is alive'

may uño vo vā (8.3.33) 138 'a replacement in *vA* comes, optionally, in place of *uÑ* when *uÑ* occurs after a sound denoted by *maY* and *aC* follows in close proximity'

mayūravyaṃsakādayaś ca (2.1.72) 205 'nominals enumerated in the list headed by *mayūravyaṃsaka* 'as cunning as a peacock' are also termed *tatpuruṣa*'

maskaramaskariṇo ... (6.1.152) 119 'the words *maskara* and *maskarin* are derived, via *nipātana*, with introduction of augment *sUT* when the signification is *veṇu* 'bamboo' and *parivrājaka* 'wandering ascetic,' respectively'

māturutsaṃkhyāsambhadrapūrvāyāḥ (4.1.115) 107 'the *taddhita* affix *aṆ* occurs after the syntactically related nominal stem *mātṛ* 'mother,' where its final *ṛ* is concurrently replaced with *u*, provided the derivate denotes an *apatya* 'offspring' and *mātṛ* is used in combination after a constituent denoting *saṃkhyā* 'number,' or is used after *sam* and *bhadra*'

mid aco' ntyāt paraḥ (1.4.47) 96 'that which is marked with *M* as an *it* is attached after the last vowel'

mukhanāsikāvacano' nunāsikaḥ (1.1.8) 121 'that which is articulated through mouth and nose, at once, is termed *anunāsika*'

mṛjer vṛddhiḥ (7.2.114) 138 'a vowel termed *vṛddhi* comes in place of the *iK*-vowel of an *aṅga* constituted by *mṛjI* 'to cleanse'

yaci bham (1.4.18) 79 'a form is termed *bha* when a non-*sarvanāmasthāna* affix termed *svādi* beginning with *y* or a vowel (*aC*) follows'

yañaś ca (4.1.16) 176 'affix *ṄīP* also occurs to denote feminine after a non-secondary (*anupasarjana*) nominal stem which ends in *yaÑ*'

yañiñoś ca (4.1.101) 176 'affix *phaK* occurs after a syntactically related nominal stem which ends in affixes *yaÑ* and *iÑ*, provided a descendant termed *gotra* is denoted'

yataś ca nirdhāraṇam (2.3.41) 160 'a genitive (*ṣaṣṭhī*) and locative (*saptamī*) also occurs after a stem which denotes many from among whom one is singled out'

yattadetebhyaḥ parimāṇe (5.2.39) 121 'the *taddhita* affix *vatUP* occurs to denote the sense of *ṣaṣṭhī* after syntactically related nominal stems *yad* 'that which' and *etad* 'this' when they end in the nominative (*prathamā*) and occur in syntactic coordination with *parimāṇa* 'all inclusive measure''

yathāsaṃkhyam anudeśaḥ samānām (1.3.10) 36 'assignment of equivalency of items of equal number in sets is assigned in accord with order of enumeration'

yaro 'nunāsike' nunāsiko vā (8.4.45) 85 'a *pada*-final sound denoted by *yaR* is optionally replaced with an *anunāsika* when this same follows in close proximity'

yavayavakaṣaṣṭikād yat (5.2.3) 159 'the *taddhita* affix *yaT* occurs to denote the locus of *bhavanam* 'being, becoming' after syntactically related nominal stems *yava* 'barley,' *yavaka* 'ibidem,' and *ṣaṣṭika* 'a variety of rice ready for harvest in sixty days' when they end in the genitive (*ṣaṣṭhī*), provided *kṣetra* 'field' forms the locus'

yasmāt pratyayavidhis tadādi pratyaye' ṅgam (1.4.13) 86 'a form which extends up to the affix, and begins with that after which the affix is introduced, is termed *aṅga*, provided when the affix follows'

yasyeti ca (6.4.148) 167 'the final sound segment of an *aṅga* termed *bha* which ends in *i* and *a*, goes through deletion by means of *LOPA* when *ī* or a *taddhita* affix follows'

yāḍ āpaḥ (7.3.133) 136 'augment *āT* is introduced to an affix which is marked with *Ṅ* and occurs after an *aṅga* terminating in *aP*'

yuvor anākau (7.1.1) 63 'affixes *yu* and *vu*, in relation to an *aṅga*, are replaced with *ana* and *aka*' *yuṣmadasmador anyatarasyāṃ khañ ca* (4.3.1) 122 'the *taddhita* affix *khaÑ*, and *cha* as well, occurs optionally after a syntactically related *vṛddha* nominal stem *yuṣmad* and *asmad* when derivates denote a residual meaning'

yūstryākhyau nadī (1.4.3) 123 'forms which denote feminine and end in *ī* and *u* are termed *nadī*'

yena vidhis tadantasya (1.1.72) 130 'that by means of which a provision is made denotes an item which ends in that'

yogapramāṇe ca tadabhāve 'darśanāt (1.2.55) ?? 'if association with a place of residence (*nivāsa*) is the standard for assignment of the term, it should no longer be assigned when the association disappears'

raṣābhyāṃ no ṇaḥ samānapade (8.4.1) 63 'a replacement in *ṇ* comes in place of *n* which occurs preceded by *r* and *ṣ* in close proximity within the same word'

rādhīkṣyor yasya vipraśnaḥ (1.4.39) 148 'a *kāraka* which serves as one about whom many inquiries are made is termed *sampradāna* when *rādhA* 'to prophesy' and *īkṣA* 'to look, observe' are used'

rucyarthānāṃ prīyamāṇaḥ (1.4.33) 148 'a *kāraka* which serves as one who is pleased (*prīyamāṇa*) is termed *sampradāna* when verbal roots having the signification of *ruc* 'to please' are used'

rudhādibhyaḥ śnam (3.1.78) 'affix *ŚnaM* occurs after verbal roots enumerated in the group headed by *rudhIR* 'to hold down, round up' when a *sárvadhāluka* affix used with the denotation of *kartṛ* follows'

rogākhyāyāṃ ṇvul bahulam (3.3.108) 80 'affix *ṆvuL* occurs, variously, after a verbal root to denote action in the feminine when the derivate names a disease'

laḥ karmaṇi ca bhāve cākarmakebhyaḥ (3.4.69) 54 'a *LA*-affix is introduced after an transitive verbal root when agent (*kartṛ*) and object (*karman*), and after an intransitive verbal root when agent and root-sense (*bhāva*), are to be denoted'

laḥ parasmaipadam (1.4.99) 27 'a replacement of *LA* is termed *parasmaipada* (active)'

lakṣaṇahetvoḥ kriyāyāḥ (3.2.126) 185 'affixes *ŚatṚ* and *ŚānaC* occur after a verbal root in place of *LAṬ* when action denoted by the root constitutes a *lakṣaṇa* 'characteristic mark,' or *hetu* 'cause,' of some other action'

laṭaḥ śatṛśānacāv aprathamā samānādhikaraṇe (3.2.124) 116 'affixes *ŚatṚ* and *ŚānaC* occur after a verbal root in place of *LAṬ* when action is denoted at the current time, and when *LAṬ* is not coreferential with a *pada* which ends in the nominative (*prathamā*)'

laśakv ataddhite (1.3.8) 123 'an initial *L*, *Ś*, and sounds denoted by the abbreviatory term *kU* (velar stops and nasal; 1.1.69 *aṇudit savarṇasya cāpratyayaḥ*), are termed *it* when they occur in the first citation (*upadeśa*) of an affix other than a *taddhita*'

liṅaḥ salopo' nantyasya (7.2.79) 194 'the non-final *s* in a *sārvadhātuka* replacement of affix *LIṄ* goes through deletion by *LOPA*'

liṭas tajhayor eśiirec (3.4.81) 115 'the *ta* and *jha* which replace *LIṬ* are replaced with *eŚ* and *ireC*, respectively'

liṭi dhātor anabhyāsasya (6.1.8) 113 'that part of a root which is formed with its first among vowels, or formed with its second if the root begins with a vowel, is iterated in two, provided affix *LIṬ* follows'

liṭy anyatarasyām (2.4.40) 116 '*ad* is, optionally, replaced by *ghasḶ* when an *ārdhadhātuka* replacement of *LIṬ* follows'

liṭy abhyāsasyobhayeṣām (6.1.17) 66 'the *abhyāsa* of verbal roots enumerated beginning with *vacI* 'to speak' and *grahI* 'to hold, sieze' goes through *samprasāraṇa* when *LIṬ* follows'

luk taddhita luki (1.2.49) 47 'the feminine affix of an *upasarjana* 'secondary' also goes through deletion via *LUK* when a *taddhita* affix goes through deletion via *LUK*'

lug vā duhadihalihaguhātmanepade dantye (7.3.73) 100 'a deletion by *LUK* comes, optionally, in place of *ksa* of an *aṅga*, namely, *duhA*, *dihA*, *lihA* and *guhA*, when an *ātmanepada* affix beginning with a dental sound segment follows'

luṭaḥ prathamasya dāraurasaḥ (2.4.85) 97 'the third-personal replacements of *tiṄ* are replaced with *Ḍā*, *rau* and *ras*, respectively' *lupi yauktavad vyaktivacane* (1.2.51) 100 'the original number and gender of a base is retained when there is deletion of a *taddhita* affix, via *LUP*'

lopaḥ śākalyasya (8.3.19) 116 'a *pada*-final *v* or *y* which occurs after *a* or *ā* is, in the opinion of Śākalya, replaced with *LOPA* when a sound denoted by *aŚ* follows in close proximity'

vacisvapiyajādīnāṃ kiti (6.1.15) 116 'verbal roots *vac* 'to speak,' *ÑIsvap* 'to sleep,' and also roots listed in the group headed by *yaj*, go through *samprasāraṇa* when an affix marked with *K* follows'

vayasi prathame (4.1.20) 167 'affix *ṄīP* occurs to denote feminine after a non-secondary nominal stem which ends in *-a* and denotes the first stage of life'

vartamāne laṭ (3.2.123) 63 'affix *LAṬ* is introduced after a verbal root when action is denoted at the current time'

vā chandasi (3.4.88) 137 'affix *athuC* is introduced after a verbal root marked with *ṬU* as an *it* when *bhāva* 'root-sense' and a *kāraka* other than *kartṛ* is denoted'

vā dāntaśāntapūrṇadastaspaṣṭacchannajñaptāḥ (7.2.27) 119 '*dānta, śānta, pūaṇa, spaṣṭa, channa,* and *jñapta* are divided, optionally via *nipātana*, from verbal roots *dam, śam, pūrI, daś, spaś, chad* and *jñap*'

vānto yi pratyaye (6.1.79) 130 'a replacement with *v* at the end, i.e., *av* and *āv*, occurs when a *y*-initial affix follows'

vāmi (1.4.5) 116 'except for *strī*, forms which terminate in *ī, ū* and denote feminine are, optionally, not termed *nadī* when they have a replacement in *iyAṄ*, *uvAṄ*, and occur before the genitive plural ending *ām*'

vāraṇārthānām īpsitaḥ (1.4.27) 148 'a *kāraka* which serves as that which is desired is termed *apādāna* when verbal roots having the signification of *vāraṇa* 'warding off' are used'

vā liṭi (2.4.55) 116 '*cakṣIṄ* 'to speak' is replaced with *khyāÑ* when an *ārdhadhātuka* affix follows'

vā' sarūpo' striyām (3.1.94) 51 'a formally dissimilar (*asarūpa*) affix introduced by an exception rule in this domain of *dhātoḥ*, optionally, blocks introduction of its general counterpart except when the affix relates to the domain of rules which allow derivation of feminine forms'

vā supy āpiśaleḥ (6.1.92) 118 'a single replacement in *vṛddhi*, in the opinion of Āpiśali, comes, optionally, in place of both, the final *a* of a preverb and initial *ṛ* of a verbal root when *saṃhitā* finds its scope'

vāhitāgnyādiṣu (2.2.37) 208 'a *pada* which contains a stem in *niṣṭhā* is placed first in a *bahuvrīhi* compound'

vipratiṣedhe paraṃ kāryam (1.4.2) 5 'apply the rule which is subsequent in order when conflict among rules of equal strength obtains'

vibhaktiś ca (1.4.104) 69 'each triplet of *sUP* and *tiṄ* is also termed *vibhakti*'

vibhāṣā (2.1.11) 194 'what follows hereafter is *vibhāṣā* 'option'

vibhāṣā' abhyavapūrvasya (6.1.26) 117 'verbal root *ŚyaiṄ*, when used after the preverb *abhi* and *ava*, goes through *samprasāraṇa*, only optionally'

vibhāṣā jasi (1.1.32) 39 'items listed in the group headed by *sarva* are, optionally, not termed *sarvanāman* when they combine in a *dvandva* compound and operations relative to *Jas* are to be performed'

vibhāṣā diksamāse bahuvrīhau (1.1.28) 109 'items listed in the group headed by *sarva* are, optionally, termed *sarvanāman* when they combine in a *bahuvrīhi* compound formed with constituents denoting *diś* 'direction''

vibhāṣā luṅlṛṅoḥ (2.4.50) 116 '*iṄ* is replaced with *gāṄ* when an *ārdhadhātuka* replacement of *LUṄ* and *LṚṄ* follows'

vibhāṣā śvaḥ (6.1.30) 115 'verbal root *ṬUośvI* 'to swell' goes, optionally, through *samprasāraṇa* when affixes *LIṬ* and *yaṄ* follow'

vibhāṣopapadena (1.3.77) 114 'an *ātmanepada* affix occurs, optionally, after roots used with a co-occurring *pada* which denotes the fruit of the action accruing to the agent'

vibhāṣorṇoḥ (1.2.3) 115 'an affix with *iṬ* as its initial is, optionally, treated as marked with *Ṅ* when the same occurs after verbal root *urṇuÑ* 'to cover' *virāmo' vasānam* (1.4.110) 124 'a cessation of speech (*virāma*) is termed *avasāna* (termination)'

viśeṣaṇaṃ viśeṣyeṇa bahulam (2.1.57) 207 'a *pada* which ends in a *sUP* and denotes a qualifying property (*viśeṣaṇavāci*) combines, variously, in a *tatpuruṣa* compound with a syntactically related coreferential *pada* which ends in a *sUP* and denotes the object so qualified'

vṛddhinimittasya ca taddhitasyāraktavikāre (6.3.39) 151 'the form of a nominal which denotes feminine, shares identical bases with a corresponding masculine and ends in a *taddhita* affix conditioning *vṛddhi*, is not treated as that of its masculine, provided this *taddhita* affix was introduced with the signification of something other than *rakta* 'colored by means of... (4.2.1 *tena raktaṃ rāgāt*)' and *vikāra* 'a modification of... (4.3.134 *tasyavikāraḥ*)''

vṛddhir ādaic (1.1.1) 2 '*ā, ai* and *au* are termed *vṛddhi*'

vṛddhir eci (6.1.88) 134 'a single replacement in *vṛddhi* comes in place of both, a sound denoted by the abbreviatory term *eC* (*e, o, ai, au*) which follows *a* and the *a* which precedes *eC*, in close proximity (*saṃhitā*)'

vṛddhir yasyācām ādis tad vṛddham (1.1.37) 103 'that from among whose vowels the first is *vṛddhi* is termed *vṛddha*'

vṛddhetkosalājādāññyaṅ (4.1.169) 202 'the *taddhita* affix *ÑyaṄ* occurs to denote *apatya* after a syntactically related nominal stem which ends in the genitive (*ṣaṣṭhī*) and names a *janapada* 'principality, cluster of villages' with the signification of a *kṣatriya*, provided the base is either termed *vṛddha* or ends in *i*, or else is constituted by *kosala* and *ajāda*'

śakisahoś ca (3.1.99) 93 'affix *yaT* occurs, also, after verbal roots *śakḶ* 'to be strong, capable' and *ṣahA* 'to endure, forgive''

śabdavairakalahābhrakaṇvameghebhyaḥ karaṇe (3.1.17) 22 'affix *KyaṄ* occurs optionally to denote *karaṇa* 'doing' after *śabda* 'sound, noise,' *vaira* 'hostility,' *kalaha* 'quarrel,' *abhra* 'cloud,' *kaṇva* 'sin' and *megha* 'cloud' when these denote the object of making or doing'

śarpare visarjanīyaḥ (8.3.35) 120 'a *visarjanīya* is replaced with *visarjanīya* when a sound denoted by *khaR*, itself followed by another denoted by *śaR*, follows in close proximity'

śā hau (6.4.35) 82 'an *aṅga*, namely, *śas*, is replaced with *śā* when affix *hi* follows'

śi sarvanāmasthānam (1.1.42) 111 '*Śi* (a substitute of the nominative and accusative plural endings *Jas* and *Śas* after neuter stems) is termed *sarvanāmasthāna*'

śṛtaṃ pāke (6.1.27) 117 'verbal root *śrā* is optionally replaced with *śṛ*, via *nipātana*, when it is used with the signification of *pāka* 'cooking,' and when affix *Kta* follows'

śe mucādīnām (7.1.59) 97 'augment *nUM* is introduced to an *aṅga* constituted by a root enumerated in the group headed by *mucḶ* 'to release' when affix *Śa* follows'

śeṣāt kartari parasmaipadam (1.3.78) 69 'a *parasmaipada* affix occurs after the remainder of roots when agent (*kartṛ*) is denoted'

śeṣe (4.2.92) 62 'in the sense of other than one already specified'

śeṣo ghy asakhi (1.4.7) 123 'the remainder of forms which end in *i* and *u*, with the exception of *sakhi* 'companion,' are termed *ghi*'

śeṣo bahuvrīhiḥ (2.2.23) 135 'that which is not already specified is termed *bahuvrīhi*'

śnassor allopaḥ (6.4.111) 82 'the *a* of *ŚnaM*, and that of verbal root *as*, goes through deletion, via *LOPA*, when a *sārvadhātuka* affix marked with *K* and *Ṅ* as an *it* follows'

śnān nalopaḥ (6.4.23) 79 'a *n* which occurs after *Śna* is deleted by means of *LOPA*'

śraviṣṭhāphālgunyanurādhāsvātitiṣyapunarvasuhastaviśākhāṣāḍhābahulāl luk (4.3.34) 101 'a *taddhita* affix which occurs after syntactically related nominal stems *śraviṣṭhā, phalgunī, anurādhā, svāti, tiṣya, punarvasu, hasta, viśākhā, aṣāḍhā* and *bahulā* goes through deletion via *LUK*'

ślāghahnuṅsthāśapāṃ . . . (1.4.34) 148 'a *kāraka* which serves as someone whom one wishes to be aware of is termed *sampradāna* when verbal roots *ślāghA* 'to praise,' *hunṄ* 'to hide,' *sthā* 'to stay' and *śapA* 'to curse' are used'

ślau (6.1.10) 47 'that part of a root which is formed with its first vowel, or formed with its second if the root begins with a vowel, is iterated to become two if not already iterated, when *ŚLU* follows'

ṣaṣṭhī (2.2.8) 202 'a *pada* which ends in the genitive (*ṣaṣṭhī*) combines, optionally, in a *tatpuruṣa* compound with a syntactically related *pada* which ends in a *sUP*' *śaṣṭhī śeṣe* (2.3.50) 68 'a genitive occurs after a nominal stem when the remainder (*śeṣa*) is to be expressed'

ṣaṣṭhīyuktaś chandasi vā (1.4.9) 45 '*pati*, in the Vedic, is optionally termed *ghi* when it occurs in connection with a word ending in the genitive'

ṣaṣṭhī stāneyogā (1.1.49) 45 'a genitive (*ṣaṣṭhī*), not interpretable otherwise, denotes 'in place of' '

ṣṇāntā ṣaṭ (1.1.24) 64 'number words which end in *ṣ* and *ṇ* are termed *ṣaṭ*'

ṣyaṅaḥ samprasāraṇaṃ putrapatyos tatpuruṣe (6.1.13) 79 '*ṢyaṄ* goes through *samprasāraṇa* when *putra* and *pati* follow in a *tatpuruṣa* compound'

saṃyogāntasya lopaḥ (8.2.23) 8 'a deletion by *LOPA* comes in place of the final sound segment of a *pada* which ends in a conjunct'

saṃyoge guru (1.4.11) 123 'a short vowel, termed *laghu*, is termed *guru* when it occurs before a conjunct (*saṃyoga*)'

saṃhitāyām (6.1.72) 63 'when close proximity (*saṃhitā*) between sounds obtains'

saṃkhyayāvyayāsannādūrādhikasaṃkhyāḥ saṃkhyeye (2.2.25) 208 'a *pada* which ends in a *sUP* and contains an *avyaya*, or contains *āsanna* 'proximate,' *adūra* 'not far, near,' *adhika* 'more' and *saṃkhyā* 'number,' combines, optionally, in a *bahuvrīhi* compound with a *pada* which ends in *sUP* and contains a *saṃkhyā* denoting things counted (*saṃkhyeya*)'

saṃkhyāpūrvo dviguḥ (2.1.52) 124 'a compound which begins with a constituent denoting *saṃkhyā* 'number' is termed *dvigu*'

saṃkhyāyā atiśadantāyāḥ kan (5.1.22) 128 'the *taddhita* affix *kaN* occurs to denote the sense of affixes introduced by rules prior to, and including 5.1.63 *tad arhati*, after a nominal stem which ends in an appropriate ending and signifies a number, but does not have *ti* and *śata* as its final'

saṃjñāpūraṇayoś ca (6.3.38) 209 'the form of a nominal which denotes feminine, shares identical bases for usage with a corresponding masculine, and is either a name (*saṃjñā*), or ends in a *pūraṇa* suffix, is not treated as that of its masculine'

satyapāśarūpavīṇātūlaślokasenālomatvacavarmacūrṇacurādibhyo ṇic (3.1.25) 36 'affix *ṆiC* occurs after nominal stems *satya* 'truth,' *pāśa* 'snare,' *rūpa* 'form, shape, figure,' *vīṇā* 'lute,' *tūla* 'cotton,' *śloka* 'verse,' *senā* 'army,' *loma* 'hair on body,' *tvac* 'skin,' *varma* 'protective armor' and *cūrṇa* 'powder'; it also occurs after verbal roots listed in the class headed by *cur* 'to steal'

sa napuṃsakam (2.4.17) 206 'a *dvigu*, or *dvandva* compound, which carries the denotatum of one is termed neuter'

sanādyantā dhātavaḥ (3.1.32) 52 'forms which end in affixes *saN*, et cetera, are termed *dhātu*'

saptamīpañcamyau kārakamadhye (2.3.7) 160 'a *saptamī* 'seventh triplet, accusative' and *pañcamī* 'fifth triplet, ablative' occurs after stems denoting *kāla* 'time' and *adhvan* 'road' when a span of time or distance between two participants (*kārakas*) is signified'

saptamī viśeṣaṇe bahuvrīhau (2.2.35) 192 'a *pada* which ends in the locative (*saptamī*), or is a qualifier, is placed first in a *bahuvrīhi* compound'

saptamī śauṇḍaiḥ (2.1.40) 202 'a *pada* which ends in the locative (*saptamī*), optionally, combines in a *tatpuruṣa* compound with a syntactically related *pada* which ends in a *sUP* and contains *śauṇḍa* 'cunning, skilled,' et cetera'

saptamy adhikaraṇe ca (2.3.36) 146 'a *saptamī* occurs after a nominal stem when *adhikaraṇa* 'locus' is not expressed otherwise; in addition, it occurs after *dūra* 'far,' *antika* 'near' and their synonyms'

samarthaḥ padavidhiḥ (2.1.1) 62 'an operation (*vidhi*) concerning fully inflected words (*pada*) is to be syntactically related (*samartha*)'

samarthānāṃ prathamād vā (4.1.82) 62 'an affix termed *taddhita* occurs (from here on prior to 5.3.1 *prāg diśo . . .*) after the first among syntactically related nominal stems'

samānakartṛkayoḥ pūrvakāle (3.4.21) 185 'affix *Ktvā* occurs after a verbal root which denotes a prior action relative to some subsequent action, provided both actions share the same agent'

samānakartṛkeṣu tumun (3.3.158) 186 'affix *tumUN* occurs after a verbal root used in conjunction with the other which has the signification of *iṣ* 'to wish,' provided both actions share

the same agent'
samāsasya (6.1.223) 79 'of that which is termed *samāsa*'
samāsāntāḥ (5.4.68) 78 'the *taddhita* affixes introduced, henceforth, occur at the end of a nominal stem termed compound (*samāsa*)'
samāhāraḥ svaritaḥ (1.2.31) 122 'that which is articulated with a combination of *udātta* and *anudātta* is termed *svarita*'
samprasāraṇasya (6.3.139) 79 'the final sound of a word which has gone through *samprasāraṇa* is replaced with its long counterpart when a constituent combines to follow'
samprasāraṇāc ca (6.1.108) 115 'a single replacement similar to the preceding comes in place of both, the preceding *samprasāraṇa* vowel and the vowel which follows, when *saṃhitā* finds its scope'
sambodhane ca (2.3.47) 161 'a nominative (*prathamā*) also occurs after a stem when *sambodhana* 'address' is denoted'
sarvanāmnaḥ smai (7.1.14) 84 'affix *Ṅe,* when occurring after a pronominal ending in *a,* is replaced with *smai*'
sarvasya dve (8.1.1) 63 'two in place of a single whole'
sarvādīni sarvanāmāni (1.1.27) 39 'items listed in the group headed by *sarva* are termed *sarvanāman*'
sasajuṣo ruḥ (8.2.66) 167 'the final *s* of a *pada* which ends in *s,* and also the *ṣ* of *sajuṣ* are replaced with *rU* at the end of a *pada*'
sahanañavidyamānapūravāc ca (4.1.57) 136 'affix *ṄīṢ* also does not occur to denote feminine after an *upasarjana* 'secondary' nominal stem which denotes *svāṅga* 'one's own limb' and is used in combination preceded by *saha* 'with,' *naÑ* 'not' and *vidyamāna* 'present, existent''
sahayukte'pradhāne (2.3.19) 160 'a *tṛtīyā* 'third triplet' occurs after stems which denote *apradhāna* 'non-principal' and are used in conjunction with *saha* 'with,' or its synonyms'
saha supā (2.1.4) 137 'a *pada* which ends in a *sUP* combines in a *samāsa* 'compound' with another syntactically related *pada* ending in a *sUP*'
sādhakatamaṃ karaṇam (1.4.42) 45 'a *kāraka* which serves as the most instrumental means for accomplishing an action is termed *karaṇa*'
sānta mahataḥ saṃyogasya (6.4.10) 133 'the next to the last vowel of a *saṃyoga* 'conjunct' ending in *s,* or the penultimate vowel of *n* of *mahat,* is replaced with its long counterpart when a *sarvanāmasthāna* affix other than *sambuddhi* follows'
sā' mantritam (2.3.48) 239 'a form which ends in the nominative (*prathamā*) and denotes *sambuddhi* 'address' is termed *āmantrita*'
sāmi (2.1.27) 201 '*sāmi* 'half' is combined in a *tatpuruṣa* compound with a syntactically related *pada* which ends in a *sUP* and contains a stem ending in *Kta*'
sārvadhātukam apit (1.2.4) 165 'a *sārvadhātuka* affix, not originally marked with *P* as an *it,* is treated as marked with *Ṅ* as an *it*'
sārvadhātukārdhadhātukayoḥ (7.3.84) 115 'a replacement in *guṇa* comes in place of the *iK* of an *aṅga* when an affix termed *sārvadhātuka* and *ārdhadhātuka* follows'
sāsya devatā (4.2.24) 139 'a *taddhita* affix, namely *aṆ,* occurs as ruled after a syntactically related nominal stem, namely *devatā* 'divinity,' when the same ends in the nominative and the derivate denotes a divinity'
sici vṛddhiḥ parasmaipadeṣu (7.2.1) 63 'the final *iK*-vowel of an *aṅga* is replaced with its *vṛddhi* counterpart when *sIC,* followed by an affix termed *parasmaipada,* follows'
siti ca (1.4.16) 222 'a form which occurs followed by an affix marked with *S* as an *it* is termed *pada*'
siddhaśuṣkapakvabandhaiś ca (2.1.41) 202 'a *pada* which ends in the locative (*saptamī*) combines, optionally, in a *tatpuruṣa* compound with a syntactically related *pada* which ends in a *sUP* and contains *siddha* 'established, made,' *śuṣka* 'dried,' *pakva* 'cooked, ripened' and *bandha* 'tied, bound''
sib bahulam leṭi (3.1.34) 96 'affix *sIP* occurs, variously, after a verbal root when *LEṬ* follows'
sukhādibhyaḥ kartṛvedanāyām (3.1.18) 22 'affix *KyaṄ* occurs, optionally, after nominal stems

enumerated in the list headed by *sukha* 'pleasure, happiness,' provided the derivate denotes agent's own experience'
suḍ anapuṃsakasya (1.1.43) 111 'items denoted by the abbreviatory term *sUṬ* (*sU, au, Jas; am,* and *auṬ*) are termed *sarvanāmasthāna* when they occur after a non-neuter nominal stem'
supa ātmanaḥ kyac (3.1.8) 56 'affix *KyaC* occurs, optionally, to denote *icchā* after a *pada* which ends in a *sUP* and denotes the object of one's own wish'
supaḥ (1.4.103) 134 'individual elements of each triad of *sUP* are termed *ekavacana* 'singular,' *dvivacana* 'dual' and *bahuvacana* 'plural,' respectively'
supi ca (7.3.102) 113 'a long vowel comes in place of the final *a* of an *aṅga,* also when a *sUP* affix beginning with a sound denoted by the abbreviatory term *yaÑ* follows'
supo dhātuprātipadikayoḥ (2.4.71) 8 'a *sUP* which occurs as part of a *dhātu* 'verbal root', or of a *prātipadika* 'nominal stem,' goes through deletion via *LUK*'
suptiṅantaṃ padam (1.4.14) 8 'that which ends in a *sUP* and *tiṄ* is termed *pada*'
supy ajātau ṇinis tācchīlye (3.2.78) 29 'affix *ṆinI* occurs to denote *tācchīlya* 'one's nature, or characteristic habit' after verbal roots used in conjunction with a *pada* which ends in a *sUP* and does not denote *jāti* 'class''
sub āmantrite parāṅgavat svare (2.1.2) 114 'a *pada* which ends in a *sUP* combines in a compound (*samāsa*) with a syntactically related *pada* ending in a *sUP*'
ser hy apic ca (3.4.87) 83 'a *siP* replacement of *LOṬ* is replaced with *hi* and is treated as though not marked with *P*'
skoḥ saṃyogādyor ante ca (8.2.29) 166 'the initial *s* and *k* of a conjunct which occurs at the end of a *pada,* or which occurs followed by a sound denoted by the abbreviatory term *jhaL,* is deleted by *LOPA*'
stokāntikadūrārthakṛcchrāṇi ktena (2.1.39) 202 'a *pada* which ends in the ablative (*pañcamī*) and contains *kṛcchra* 'trouble, difficulty', or contains stems which denote *stoka* 'a bit,' *antika* 'near, proximate,' or *dūra* 'far,' optionally combines in a *tatpuruṣa* compound with a syntactically related *pada* which ends in a *sUP* and contains *Kta*'
striyāḥ puṃvadbhāṣitapuṃskādanūṅ samānādhikaraṇe striyām apūraṇīpriyādiṣu (6.3.34) 209 'the form of a nominal which denotes feminine and shares an identical base for usage with a corresponding masculine, is, when not ending in affix *ūṄ,* treated as that of its masculine, provided a nominal not ending in a *pūraṇa* suffix and not belonging to the list headed by *priyā* follows in syntactic coordination with the signification of feminine'
striyāṃ ktin (3.3.94) 41 'affix *KvanIP* occurs after verbal root *dṛśIR* 'to see' when the root occurs in construction with a *pada* which denotes *karman* 'object' and the action is denoted in the past'
striyām (4.1.3) 62 'when the denotation is feminine'
striyām avantikuntikurubhyaś ca (4.1.174) 125 'a *taddhita* affix termed *tadrāja* which occurs to denote a female offspring after syntactically related nominal stems *avanti, kunti,* and *kuru* is also deleted by *LUK*'
sthaḥ ka ca (3.2.77) 30 'affix *Ka,* and *KvIP* as well, occur after verbal root *sthā* 'to stay, stand,' used with or without any preverb,' when the root occurs in construction with a *pada* which ends in a *sUP*'
sthānāntagośālakharaśālāc ca (4.3.35) 184 'a *taddhita* affix which occurs after syntactically related nominal stems *śraviṣṭhā, phalgunī, anurādhā, svāti, tiṣya, punarvasu, hasta, viśākhā, aṣāḍhā,* and *bahulā,* all ending in the locative, is replaced with *LUK* when derivates denote 'born there''
sthānivad ādeśo' nalvidhau (1.1.56) 107 'a substitute is treated as if a substituendum except when an operation relative to an original sound (*aL*) is to be performed'
sthāne' ntaratamaḥ (1.1.50) 36 'a substitute (*ādeśa*) which is to replace a substituendum (*sthānī*) should also be most similar to the substituendum'
spṛher īpsitaḥ (1.4.36) 148 'a *kāraka* which serves as desired (*īpsita*) for the agent of an action denoted by *spṛhA* 'yearn after' is termed *sampradāna*'
syatāsī lṛluṭoḥ (3.1.33) 96 'affixes *sya* and *tāsI* occurs, respectively, after verbal roots when *LṚ* and *LUṬ* follow'

svaṃ rūpaṃ śabdasyāśabdasaṃjñā (1.1.68) 26 'a word, other than one which is a technical term of the grammar, denotes its form only'

svatantraḥ karttā (1.1.54) 123 'a participant which serves independently of others is termed agent'

svam ajñātidhanākhyāyām (1.1.35) 39 'the word *sva* is optionally termed *sarvanāman* when operations relative to *Jas* are to be performed, and when *sva* 'one's own' does not express *jñāti* 'relative, clan' or wealth (*dhana*)'

svayam ktena (2.1.25) 201 '*svayam* 'oneself,' optionally, combines in a *tatpuruṣa* compound with a syntactically related *pada* which ends in a *sUP* and contains a nominal stem terminating in *Kta*'

svarādinipātam avyayam (1.1.37) 122 'words listed in the set headed by *svara* 'sun, heaven' and those termed *nipāta* are classed as *avyaya*'

svaritañitaḥ kartrabhiprāye kriyāphale (1.3.72) 37 'an *ātmanepada* affix occurs after a verbal root marked either with a *svarita* 'circumflex accent' or with *Ñ*, provided the fruit of the action accrues to the agent'

svaritenādhikāraḥ (1.3.12) 70 'an *adhikāra* 'governing heading' is marked with *svarita*'

svāṅgāc cetaḥ (6.3.40) 209 'the form of a nominal which ends in *ī* and is used after a constituent denoting one's own limb in the feminine, sharing an identical base for usage in the masculine, is not treated as that of its masculine when a constituent other than *mānin* follows'

svāṅgāc copasarjanāt (4.1.54) 20 'affix *ṄīṢ* occurs, optionally, to denote feminine after a nominal stem which contains an *upasarjana* used as its final constituent with the denotatum of *svāṅga* and which does not contain a conjunct in its penultimate position (*upadhā*)'

svādibhyaḥ śnuḥ (3.1.73) 36 'affix *Śnu* occurs after verbal roots enumerated in the class headed by *ṣuÑ* 'to press out, squeeze' when a *sārvadhātuka* affix which denotes *kartṛ* follows'

svādiṣv asarvanāmasthāne (1.4.17) 153 'a form is termed *pada* when *svādi* '*sU*, etc. (affixes enumerated by rules 4.1.2 *svaujasmauṭ* . . . through 5.4.151 *uraḥ prabhṛtibhyaḥ kap*), with the exception of those termed *sarvanā-masthāna* (1.1.43 *suḍ anapuṃsakasya*) follow'

svādumi ṇamul (3.4.26) 186 'affix *ṆamUL* occurs after verbal root *kṛÑ* when it denotes a prior action, and shares the same agent with a subsequent action, provided *kṛÑ* is also used with an item which signifies *svādu* 'delectable'

svaujasmauṭchaṣṭābhyāmbhisṅebhyāmbhyasṅasibhyāmbhyasṅasosāṅyossup (4.1.2) 54 'affixes *su/ au/ Jas*; *am/ auṬ/ Śas*; *Ṭā/ bhyām/ bhis*; *Ṅe/ bhyām/ bhyas*; *ṅasI/ bhyām/ bhyas*; *Ṅas/ os/ ām*; *Ṅi/ os/ suP* occur after that which either ends in affixes marked with *Ṅī*, or *āP*, or is termed a nominal stem'

hanas ta ca (3.1.108) 47 'affix *KyaP* occurs to denote *bhāva* 'root-sense' after verbal root *han* 'to harm, kill, move' used with a preverb when a *pada* which ends in a *sUP* occurs in conjunction; additionally, *t* comes in place of the root-final-*n*'

hanter jaḥ (6.4.36) 83 'an *aṅga*, namely, verbal root *han*, is replaced with *ja* when affix *hi* follows'

halantyam (1.3.3) 167 'the final consonant (*haL*) of a form in *upadeśa* is termed *it*'

halas taddhitasya (6.4.150) 176 'a penultimate *y* which occurs after a consonant, as part of a *taddhita* affix relative to an *aṅga* termed *bha*, is deleted by means of *LOPA* when *ī* follows'

halo' nantarāḥ saṃyogaḥ (1.1.7) 121 'a sequence of consonants (*haL*), when not interrupted by any vowel (*aC*), is termed *saṃyoga* 'conjunct, cluster'

halṅyābbhyo dīrghāt sutisyapṛktaṃ hal (6.1.68) 101 'a *sU*, *ti* and *si* termed *apṛkta*, when occurring after an item ending in a consonant, or in a long *ī* or *ā* of the feminine affixes *Ṅī* and *āP*, is deleted by *LOPA*'

hujhalyor her dhiḥ (6.4.101) 82 'a consonant-initial *hi* which occurs after *hu*, or a form ending in a sound denoted by *jhaL*, is replaced with *dhi*'

hṛkor anyatarasyām (1.4.53) 123 'a *kāraka* which serves as the agent of *hṛÑ* 'to carry' and *ḌUkṛÑ* 'to do, make' when not used with *ṆiC*, is, optionally, termed *karman* when used with *ṆiC*'

hetumati ca (3.1.26) 97 'affix *ṆiC* occurs after verbal roots when *hetumat* 'casual action' is denoted' *hetuhetumator liṅ* (3.3.156) 185 'affix *LIṄ* occurs, optionally, after a verbal root when *hetu* 'cause' and *hetumat* 'casual action' are denoted'

hetau (2.3.23) 160 'a *tṛtīyā* 'third triplet of *sUP*' occurs after a nominal stem which denotes *hetu* 'cause''

hrasvaṃ laghu (1.4.10) 'a short vowel is termed *laghu*'

hrasvanadyāpo nuṭ (7.1.54) 128 'augment *nUṬ* is introduced to affix *ām* when the same occurs after an *aṅga* which ends in a short vowel, or ends in a form termed *nadī*, or else, ends in a feminine affix marked with *āP*'

hrasvād aṅgāt (8.2.27) 85 'the *s* which occurs after an *aṅga* terminating in a short vowel is deleted by *LOPA* when a sound denoted by *jhaL* follows'

hrasvo napuṃsake prātipadikasya (1.2.47) 87 'the final vowel of a neuter nominal stem is replaced with its short counterpart'

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